BLM LIBRARY
88077323

United States Department of the Interior
Bureau of Land Management
Elko Field Office

November 17, 1998

ENVIRONMENTAL ASSESSMENT
BLM/EK/PL-98/021

Midas Project
Midas Joint Venture

BLM Library
Denver Federal Center
Bldg. 50, OC-521
P.O. Box 25047
Denver, CO 80225

File: N16-96-001P (98-1A)

#1258117406
88077323
HD
243
.N3
M533
1998

TABLE OF CONTENTS

1.0 INTRODUCTION/PURPOSE AND NEED 1-1
1.1 INTRODUCTION 1-1
1.2 PURPOSE AND NEED 1-3
1.2.1 Issues 1-4
1.2.2 Land Use Plan Conformance Statement 1-4

2.0 PROPOSED ACTION AND ALTERNATIVE 2-1
2.1 PROPOSED ACTION 2-1
2.2 LOCATION 2-1
2.3 ROAD CONSTRUCTION 2-2
2.4 EXPLORATION HOLES 2-5
2.5 SURFACE WATER CONTROL 2-5
2.6 SURFACE DISTURBANCE 2-5
2.7 WATER USE 2-6
2.8 WORK FORCE 2-6
2.9 RECLAMATION 2-6
2.9.1 Noxious Weeds 2-7
2.10 ALTERNATIVES ELIMINATED FROM CONSIDERATION 2-8
2.11 NO-ACTION ALTERNATIVE 2-8

3.0 AFFECTED ENVIRONMENT 3-1
3.1 PROPOSED ACTION 3-1
3.1.1 Soils 3-4
3.1.2 Air Quality 3-6
3.1.3 Water Resources 3-8
3.1.4 Wetlands/Riparian Zones 3-10
3.1.5 Biological Resources 3-10
3.1.5.1 Vegetation 3-10
3.1.6 Noxious Weeds 3-11
3.1.7 Threatened, Endangered, and Sensitive Plant Species 3-11
3.1.8 Wildlife Resources 3-12
3.1.9 Threatened, Endangered, and Sensitive Wildlife Species 3-13
3.1.10 Wilderness 3-13
3.1.11 Cultural Resources 3-14
3.1.11.1 Prehistory and History 3-14
3.1.11.2 Cultural Resources Inventory 3-15
3.1.11.3 Native American Consultation 3-16
3.1.12 Visual Resources 3-18
3.1.13 Noise 3-18
3.1.14 Range Resources 3-19
3.1.15 Socioeconomics 3-21
3.2 NO-ACTION ALTERNATIVE 3-21

4.0 ENVIRONMENTAL CONSEQUENCES 4-1

BLM Library
Denver Federal Center
Bldg. 50, OC-521
P.O. Box 25047
Denver, CO 80225

4.1 PROPOSED ACTION 4-1
4.1.1 Soils 4-1
4.1.2 Air Quality 4-2
4.1.3 Water Resources 4-2
4.1.4 Wetlands/Riparian Zones 4-3
4.1.5 Biological Resources 4-4
4.1.5.1 Vegetation 4-4
4.1.6 Noxious Weeds 4-4
4.1.7 Threatened, Endangered, and Sensitive Plant Species 4-4
4.1.8 Wildlife Resources 4-4
4.1.9 Threatened, Endangered, and Sensitive Wildlife Species 4-5
4.1.10 Wilderness 4-6
4.1.11 Cultural Resources 4-6
4.1.11.1 Native American Consultation 4-7
4.1.12 Visual Resources 4-8
4.1.13 Noise 4-9
4.1.14 Range Resources 4-9
4.1.15 Socioeconomics 4-10
4.1.16 No-Action Alternative 4-10
4.1.17 Mitigation Measures 4-11
4.1.18 Cumulative Impacts 4-13
4.1.18.1 Soils 4-13
4.1.18.2 Air Quality 4-14
4.1.18.3 Water Resources 4-14
4.1.18.4 Wetlands/Riparian Zones 4-14
4.1.18.5 Biological Resources 4-14
4.1.18.6 Noxious Weeds 4-14
4.1.18.7 Threatened, Endangered, and Sensitive Plant Species 4-15
4.1.18.8 Wildlife Resources 4-15
4.1.18.9 Threatened, Endangered, and Sensitive Wildlife Species 4-15
4.1.18.10 Wilderness 4-15
4.1.18.11 Cultural Resources 4-15
4.1.18.12 Visual Resources 4-16
4.1.18.13 Noise 4-16
4.1.18.14 Range Resources 4-16
4.1.18.15 Socioeconomics 4-16
4.1.18.16 No-Action Alternative 4-17
4.1.19 Monitoring 4-17

5.0 CONSULTATION AND COORDINATION 5-1
5.1 LIST OF PREPARERS 5-1
5.2 PERSONS, GROUPS, AND AGENCIES CONSULTED 5-2

6.0 REFERENCES 6-1

TABLES

Table 1 Proposed Action Areas Disturbance
Table 2 Midas Project Agency Approved Seed Mixtures Based on Elevation and Aspect

FIGURES

Figure 1 Regional Location Map
Figure 2 Project Location Map
Figure 3 Grazing Allotments
Figure 4 Soil Survey Mapping Units
Figure 5 Surface Water and Riparian Zones
Figure 6 Visual Resource Management Areas

APPENDICES

Appendix A Soils, Order III Survey Data
Appendix B Plant Species Observed in the Area of the Midas Project (1996 EA)
Appendix C Correspondence with the Nevada Natural Heritage Program (1996 EA)
Appendix D Compilation of Recorded Eligible Sites within MJV Project Boundary (1998 EA)
Appendix E Correspondence with the Nevada Division of Wildlife and the United States Fish and Wildlife Service (1998 EA)
Appendix F Native American Notification/Consultation Contacts
Appendix G Noxious Weed Species

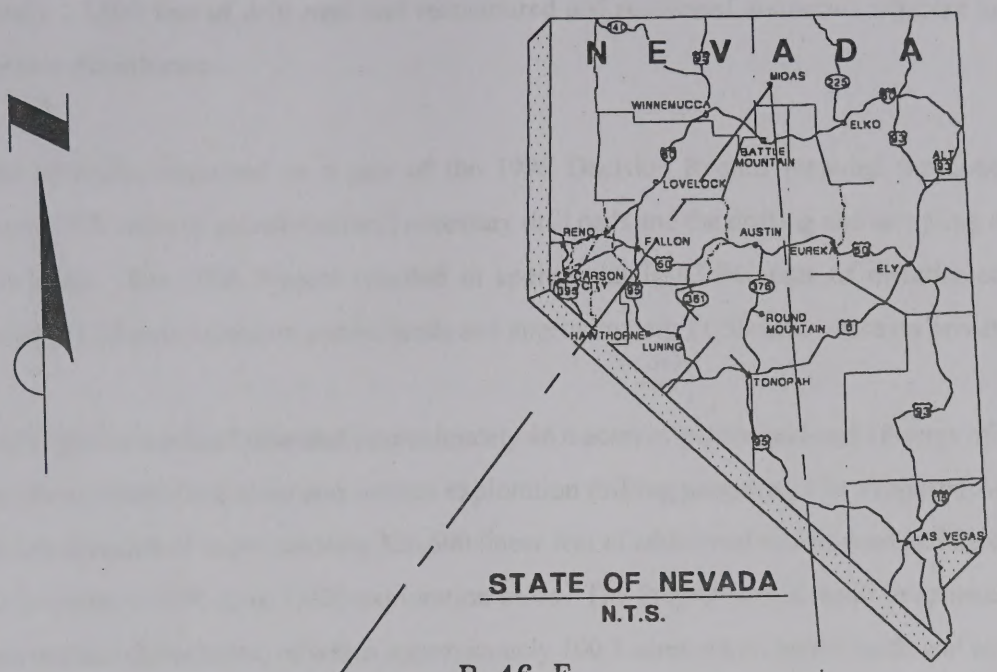
1.0 INTRODUCTION/PURPOSE AND NEED

1.1 INTRODUCTION

This Environmental Assessment (EA) is being prepared as a tiered document in response to the Bureau of Land Management's (BLM) receipt of Midas Joint Venture's Plan of Operations Modification submitted in February 1998, and in coordination with the original EA which was completed in June 1996. This Plan Modification covers an expanded project area and proposes drilling and reclamation activities similar to those authorized in the 1996 EA.

Midas Joint Venture (MJV) proposes to conduct additional surface mineral exploration activities in northeastern Nevada, for a period of approximately five field seasons, under the Midas Project Plan of Operations (POO) Modification. Exploration activities detailed in this tiered EA would consist of road construction, exploration drilling, and reclamation associated with exploration. This proposal would result in an estimated maximum area of 150 acres of new surface disturbance (100.3 acres on public land and 49.7 acres on MJV private land). The Midas Project (Project) is located on patented land owned by MJV and on unpatented Federal lode mining claims on public lands administered by the BLM's Elko Field Office. Exploration activities have been conducted previously on three contiguous Project areas and one noncontiguous Project area situated within an area approximately 2.5 miles north and east of the town of Midas, Nevada, and located about 60 miles northwest of the city of Elko in Elko County, Nevada (Figure 1). Extended exploration activities are planned to further delineate the precious metal deposit within the Project area.

The proposed Project is part of an ongoing exploration operation. Since 1994, MJV has conducted exploration drilling activities on the property under three Notices of Intent (NOI) (N16-94-10N, N16-95-12N and N16-95-13N) and Plan of Operations N-16-96-001P. The exploration activities conducted under the notice level operations included (a) the construction of approximately 31,500 feet of new drill road; (b) the widening and utilization of approximately 21,500 feet of pre-existing drill road; and (c) the drilling of 191 exploration drill holes. Of this total of 53,000 feet of drill road, MJV has recontoured and reclaimed



STATE OF NEVADA
N.T.S.

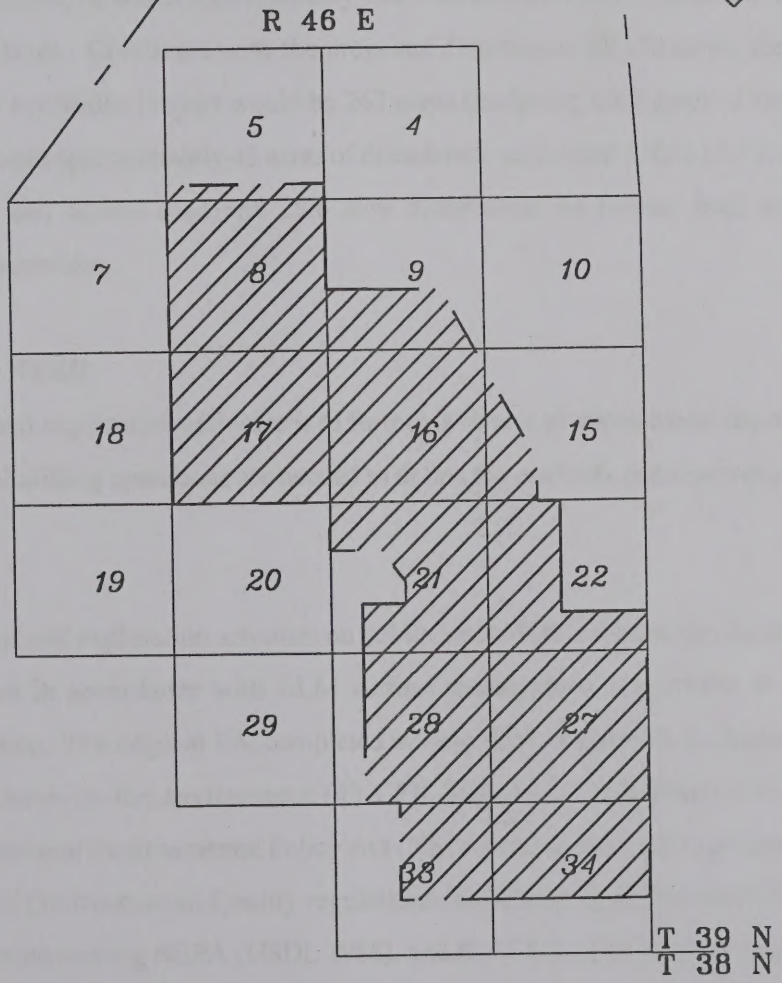
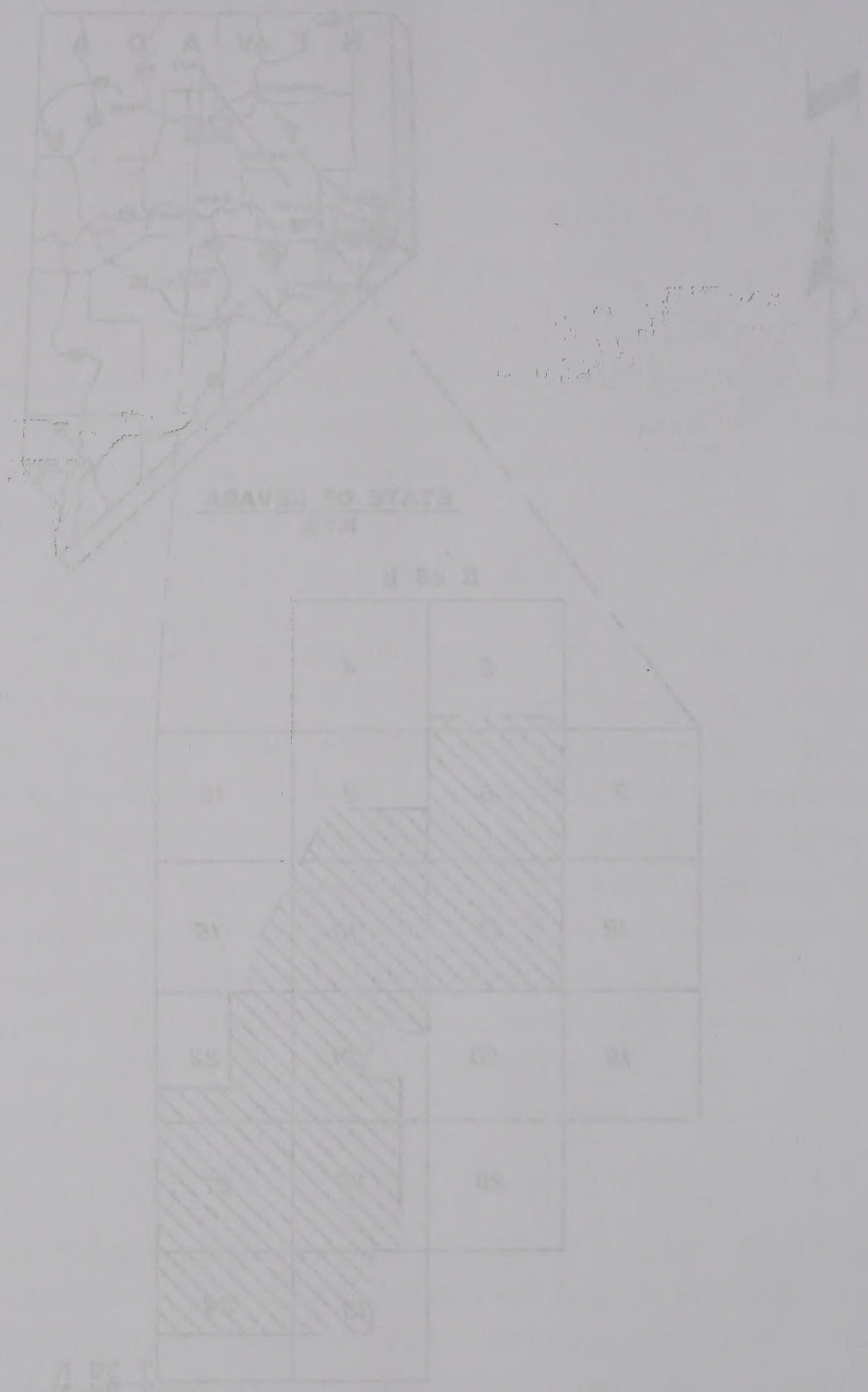


FIGURE 1

REGIONAL LOCATION MAP

MIDAS JOINT VENTURE
ELKO, NEVADA
ENVIRONMENTAL ASSESSMENT



approximately 27,500 feet of drill road and recontoured and reclaimed numerous adjacent areas of pre-existing surface disturbance.

The Project activities approved as a part of the 1996 Decision Record included the construction of approximately 17.8 miles of access road and necessary drill pads and the drilling and sampling of up to 200 exploration holes. The 1996 Project resulted in approximately 43.04 acres of disturbance, of which approximately 31.48 acres were on public lands and approximately 11.56 acres were on private lands.

In 1997, MJV recontoured and reseeded approximately 46.6 acres of public land and 18 acres of private land affected by the exploration decline and surface exploration drilling program. The Proposed Action would include the construction of approximately 326,600 linear feet of additional access road and associated pads and sumps in order to drill up to 1,000 exploration holes. The Project would result in approximately 150 acres of new surface disturbance, of which approximately 100.3 acres are on public lands and approximately 49.7 acres are on private lands. Combined with the proposed disturbance of 150 acres, the total surface cumulative disturbance for the Midas Project would be 263 acres (including 64.8 acres of recontoured and reseeded lands) which includes approximately 45 acres of disturbance associated with a 19.1 acre BLM right-of-way for a power line and access road and 25.6 acre disturbance on private land associated with underground exploration activities.

1.2 PURPOSE AND NEED

The intent of these additional exploration activities is to further delineate precious metal deposits within the Project area. The proposed drilling operations are needed to define the ore body and reserves associated with the Midas Project.

In order to conduct the proposed exploration activities on public lands, MJV submitted to the BLM the Midas Project POO Modification in accordance with BLM surface management regulations at 43 CFR 3809 detailing the Proposed Action. The original EA, completed in June 1996, documents the impacts the original Proposed Action would have on the environment (43 CFR 3809.2-1). This tiered EA fulfills BLM's responsibility under the National Environmental Policy Act (NEPA) and is prepared in general conformance with NEPA, the Council of Environmental Quality regulations implementing NEPA (40 CFR 1500-1508), the BLM guidelines for implementing NEPA (USDI, 1988), and BLM Elko Field Office guidelines (USDI, 1993).

1.2.1 Issues

The main concerns which were raised during the initial scoping period and incorporated into the 1996 EA include potential effects on water quality, cultural resources, endangered species, range resources, vegetation, and noise.

For the 1998 EA, a 30 day public scoping period was established by the BLM from April 22, 1998 through May 22, 1998. A news release was published in the Elko Daily Free Press on April 25, 1998. Letter invitations to enter into consultation were mailed to several Native Americans with comments and recommendations solicited through numerous phone calls, one field trip, and two meetings between the BLM and Te-Moak Tribe. No issues were raised during the scoping period or through the correspondence with the Native Americans.

1.2.2 Land Use Plan Conformance Statement

The Proposed Action and Alternative described below are in conformance with the Elko Resource Management Plan, Issue - Minerals, Management Prescription - 1, and are consistent with Federal, State, and local laws, regulations, and plans to the maximum extent possible.

2.0 PROPOSED ACTION AND ALTERNATIVE

MJV is the claimant and would be the operator of the proposed Midas Project. The following is the mailing address for MJV:

Midas Joint Venture
Franco-Nevada Mining Corporation, Inc.
Managing Joint Venturer
6151 Lakeside Drive, Suite 2100
Reno, Nevada 89511

2.1 PROPOSED ACTION

MJV proposes to expand the scope of its current exploration project as stated in the Midas Joint Venture: Midas Project Environmental Assessment, BLM document BLM/EK/PL-96-015, and the original POO. This tiered EA describes those activities and impacts addressed in the 1996 EA and the incremental increase in the affected environment and associated impacts which would result from the expansion of the Project scope.

MJV proposes to extend its current surface mineral exploration activities near the town of Midas in western Elko County, Nevada (Figure 1). The Project is located on private lands owned by MJV and on public lands administered by the BLM, upon which MJV controls the mineral rights with lode mining claims. The relevant Federal mining claims are listed in the POO Modification which is on file with the BLM Elko Field Office. The Proposed Action would include the construction of approximately 326,600 linear feet of additional access road and associated pads and sumps in order to drill up to 1,000 exploration holes. The Project would result in approximately 150 acres of new surface disturbance, of which approximately 100.3 acres are on public lands and approximately 49.7 acres are on private lands. MJV proposes to commence operations as soon as conditions permit in the 1998 field season. The proposed Project is expected to have a duration of approximately five years from the time of startup. Exploration activities are anticipated to occur from March through November; no exploration road construction or drilling activities are planned through the winter months. Drilling activities would generally be limited to daylight hours but may be 24 hours per day for some drill rigs.

2.2 LOCATION

The 1996 Project area was located in Sections 8, 9, 15-17, 21, 22, 27, 28, and 34, Township (T) 39 North (N), Range (R) 46 East (E), Mount Diablo Baseline and Meridian, Elko County, Nevada. The 1998 Project area

encompasses the same sections as those approved in the 1996 EA and also includes Section 33, T.39N., R.46E. The locations of the boundaries and regional setting are identified in Figure 2.

2.3 ROAD CONSTRUCTION

As described in the 1996 Plan of Operations, MJV constructed approximately 93,742 linear feet, or 17.8 miles, of new drill road, with an average roadbed width of 13 feet. Of this amount, about 17,512 linear feet consisted of site-specific re-opening of pre-existing access roads in the Project area. The roads were constructed to avoid the four identified localities of the Gold Circle Mining District site eligible for the National Register of Historic Places (NRHP) and one unevaluated locality. MJV facilitated avoidance and protection of these localities by constructing fencing prior to conducting surface disturbance. Also, three Livestock Key Areas (areas established by the BLM to provide BLM personnel locations at which to measure forage production and utilization of the allotment) were identified as being located within the area. These Livestock Key Areas were marked with lath and flagged to protect those areas from possible inadvertent disturbance.

As part of the 1998 POO Modification, MJV would construct approximately 326,600 linear feet, or 61.9 miles, of new drill road, with a 14-foot average road width and estimated 20-foot disturbance. The construction of any necessary drill pads would be calculated into the total acreage disturbed and correspondingly reduce the length of drill road to be constructed. This proposed disturbance is outlined in Table 1. MJV would continue to construct these roads to avoid the identified localities of the Gold Circle Mining District sites. MJV would continue to facilitate avoidance and protection of these localities and would construct fencing prior to conducting surface disturbance. MJV would mark and flag the three Livestock Key Areas identified in the 1996 EA to protect them from possible inadvertent disturbance. No roads would be constructed for simple ingress to or egress from the Project area.

98032-300 10/98 GRH

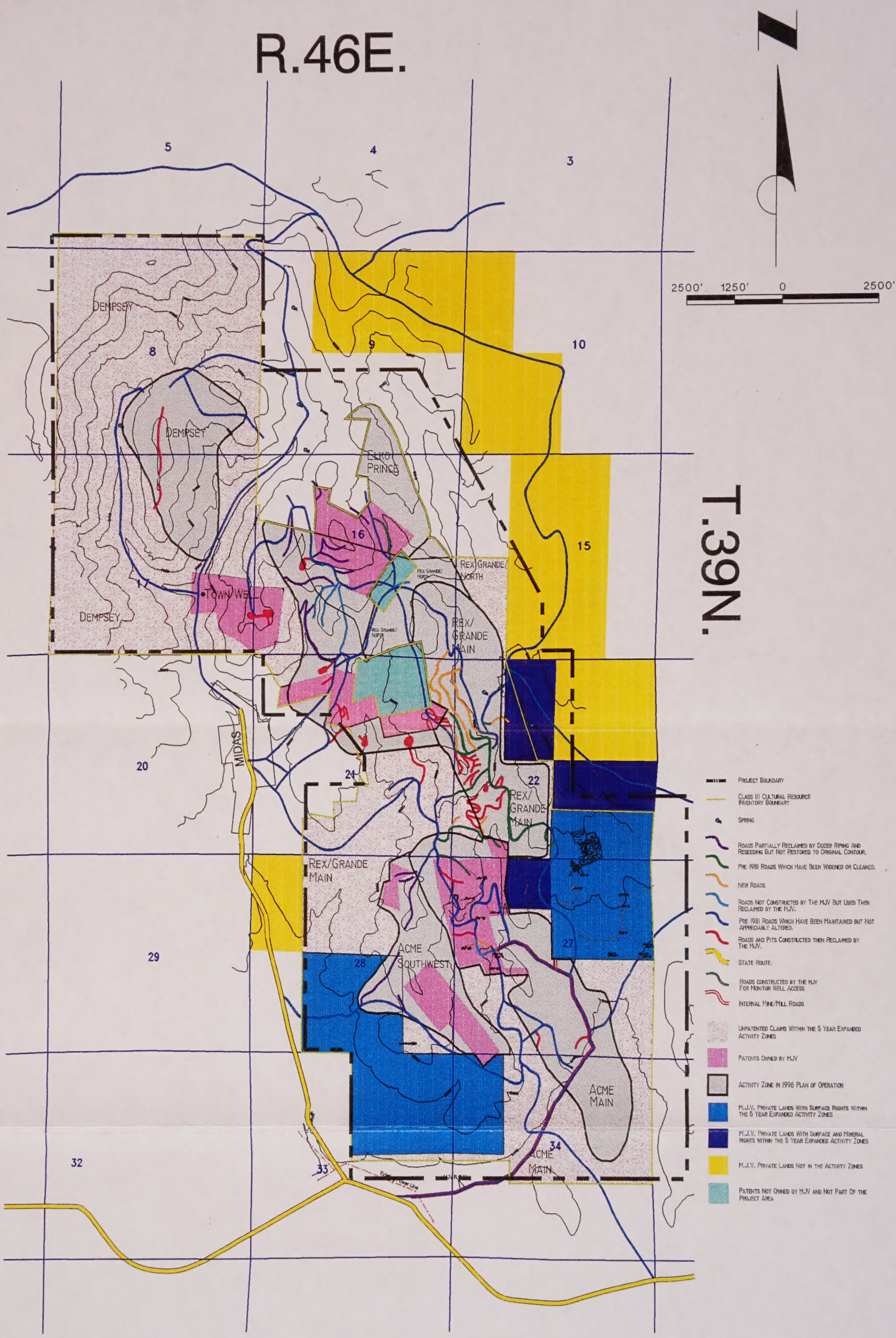


FIGURE 2

PROJECT LOCATION MAP

MIDAS JOINT VENTURE
ELKO, NEVADA
ENVIRONMENTAL ASSESSMENT

TABLE 1
PROPOSED ACTION AREAS OF DISTURBANCE[1]

Project Area		Drill Road (feet)	Acreage Disturbed[2]
Rex-Grande	Main Portion	57,800	26.5
	North Portion	7,700	3.5
Acme	Main Portion	90,900	41.6
	S.W. Portion	27,600	12.6
Dempsey		68,400	31.3
Elko Prince		74,200	34.5
Maximum Proposed Disturbance		**326,600**	**150**
MJV Previous Disturbance		146,755	113
TOTAL		**473,355**	**263**

[1] Midas Joint Venture, Plan of Operations Modification, Midas Project, Elko County, Nevada, February 1998.
[2] Estimate based on 14-foot average road width and calculated 20-foot disturbance. The construction of any necessary drill pads would be calculated into this acreage total and correspondingly reduce the length of drill road to be constructed.

The 1996 EA stated that MJV would locate and construct drill roads using standard construction practices for temporary mineral exploration roads to minimize surface disturbance, erosion, and visual contrast, as well as to facilitate reclamation. Road construction and dressing was carried out with a D-8 bulldozer equipped with dual rippers or equivalent. Rock outcrops and areas of shallow soils were avoided whenever possible.

As part of the 1998 expansion, MJV would continue to locate and construct drill roads using these standard construction practices. Water bars would be installed where needed on all roads left unreclaimed for longer than six months, or as site and weather conditions require. Road construction and dressing would be carried out with a D-8 or smaller bulldozer equipped with dual rippers or equivalent. It is not anticipated that blasting would be necessary to construct most of the exploration roadbeds. Blasting would be used at sites where rock outcrops cannot be avoided and a reasonable alternative route is not available. Rock outcrops and areas of shallow soils would continue to be avoided whenever possible.

Although a fire hazard potentially exists from the utilization of explosives if blasting operations are required, a fire is unlikely. MJV would take steps to prevent and, if necessary, suppress potential fires through use of up to five 1,000-gallon water trucks and by ensuring that each field vehicle carries hand tools and a fire extinguisher. All field vehicles with internal combustion engines would have spark arresters installed to lessen potential fire hazard. In addition, some MJV employees are members of the Midas Fire Brigade and all employees are available to assist with fire suppression when on site.

2.4 EXPLORATION HOLES

The 1996 Plan of Operations projected that approximately 200 exploration holes would be drilled over a two year period. The drill holes were plugged in accordance with Nevada Administrative Code (NAC) 534.421 and 534.425, by placing drill cuttings or inorganic fill materials into the total depth of the hole or, if groundwater was encountered, plugged as a well pursuant to NAC 534.420.

As part of the modified plan, MJV would drill up to 1,000 additional exploration holes under the Proposed Action. Drill holes would be vertical or angled and drilled with reverse circulation or diamond core drill rigs. All drill holes would be plugged in accordance with NAC 534.4371: placing concrete grout, cement grout, neat cement, sodium bentonite chips, or bentonite grout from the bottom of the drill hole to 50 feet above the highest saturated stratum encountered in the bore hole, backfilling with uncontaminated soil from the previously mentioned materials to within ten feet of the ground surface, and backfilling the remaining ten feet with concrete grout, cement grout, neat cement, sodium bentonite chips, or bentonite grout.

2.5 SURFACE WATER CONTROL

The approved activity in the 1996 Decision Record and the Proposed Action for the 1998 POO Modification indicate that all bladed roads would not exceed a ten percent grade and would be water barred, as needed or as recommended by the BLM, to facilitate drainage and reduce erosion.

2.6 SURFACE DISTURBANCE

The 1996 EA projected a maximum of 43.04 acres of disturbance. The average width of drill roads was 20 feet, including the sidecast material excavated during road construction. This disturbance included both construction of new drill roads and re-disturbance of pre-existing access roads within the Project area.

The activities detailed in the 1998 POO Modification would disturb a maximum of 150 additional acres. This estimate assumes an average width of 20 feet for exploration drill roads, which includes the sidecast

material excavated during road construction. The proposed disturbance includes both construction of new drill roads and re-disturbance of pre-existing access roads within the Project area.

2.7 WATER USE

To support activities approved in the 1996 Decision Record, MJV obtained permits from the State Engineer, Division of Water Resources, for the temporary use of water from underground sources in Sections 22, 27 and 34, T.39N., R.46E., located within and adjacent to the Project area.

Water for the drilling project proposed in the 1998 POO Modification would be obtained from water sources for which MJV has water rights on file with the Nevada State Engineer, Division of Water Resources. The water required for exploration activities would be obtained from these sources. State-approved, non-toxic drilling additives may be used as necessary. Project water use would amount to approximately 9,000 gallons per day (gpd) per drill rig. Based on pumping experience from past exploration activities, there should be sufficient yield to maintain the required flow rates for the life of the Project.

2.8 WORK FORCE

The 1996 Plan of Operations proposed a maximum of nine drill rigs to be in operation at any one time in the Project area. Each drill rig had a crew consisting of one operator and one or two helpers. A total of seven staff and 18 to 27 contractor employees were projected to be on site at any given time.

For activities proposed in the 1998 Plan, a maximum of 11 drill rigs consisting of five rotary drill rigs and six diamond core drill rigs are proposed to be in operation at any one time in the Project area. Each drill rig would have a crew consisting of one operator and one or two helpers. There would be approximately 11 geologists and/or supervisors for the entire Project for a total of 33 to 44 staff or contractor employees on site at any given time.

2.9 RECLAMATION

The reclamation of exploration roads would consist primarily of recontouring and seeding. A Cat 240 excavator or equivalent would be used to replace the cut roadbed with the sidecast downslope soil material. The excavator would then be used to flatten the berm on the upslope sides of the roads and to recontour the slope to near the original grade and roughen the surface.

Disturbed areas would be reseeded with an agency-approved seed mixture (Table 2) using a hand-held or mechanical broadcast seeder. Seeding would occur during fall months. Reseeded areas would be dragged with a chain or raked, when practical, to provide seed cover and enhance germination. Where possible, reclaimed surfaces would be left in a roughened state to facilitate moisture retention and revegetative success while minimizing potential soil erosion. The Project would be bonded to ensure that reclamation activities are completed.

TABLE 2
MIDAS PROJECT AGENCY-APPROVED SEED MIXTURES
BASED ON ELEVATION AND ASPECT

Midas Seed Mixture for Sites Above 6,000 Feet and North-Facing Slopes Between 5,500 and 6,000 Feet	
Bluebunch Wheatgrass	3.0 pounds
Great Basin Wildrye	3.0 pounds
Slender Wheatgrass	3.0 pounds
Nordan Crested Wheatgrass	2.0 pounds
Small Burnet	2.0 pounds
Ladak Alfalfa	2.0 pounds
Palmer Penstemon	0.5 pounds
TOTAL	**15.5 pounds**
Midas Seed Mixture for Sites Below 5,500 Feet and South-Facing Slopes Between 5,500 and 6,000 Feet	
Nordan Crested Wheatgrass	5.0 pounds
Indian Ricegrass	2.0 pounds
Squirrel Tail	1.0 pounds
Great Basin Wildrye	4.0 pounds
Slender Wheatgrass	1.0 pounds
Small Burnet	2.0 pounds
Ladak Alfalfa	2.0 pounds
Globe Mallow	0.05 pounds
TOTAL	**17.05 pounds**

Note: These seed mixtures would be mechanically or hand-held broadcast seeded at the above rates per acre, followed by a light harrowing where practical.

2.9.1 Noxious Weeds

Timely reclamation of disturbed areas and avoidance of areas of noxious weed infestation while constructing roads and traveling between drill sites would reduce the spread of noxious weeds. Travel within the Project

area is generally limited to improved roadways which are periodically maintained. In the event that off-road travel is required, areas infested with noxious weeds would be avoided to the extent practical. If areas infested with noxious weeds cannot be avoided, vehicles traveling through the noxious weeds will be taken to the wash bay for cleaning prior to traveling through uninfested areas. If the BLM identifies a noxious weed problem, Fairway crested wheatgrass would be added to the seed mix during reclamation to compete with invader species. If necessary, an appropriate and BLM-approved herbicide would be used to control the spread of noxious weeds.

2.10 ALTERNATIVES ELIMINATED FROM CONSIDERATION

The Proposed Action in the POO Modification is for expansion of exploration drilling within the Project area of interest outlined by MJV in the original POO. Other alternatives that were evaluated in the 1996 EA included alternative exploration locations, access locations, and drilling methods. Because none of these alternatives would provide a significant environmental benefit, all were eliminated from further consideration.

2.11 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the BLM would not approve the POO Modification. As a result, MJV would be unable to conduct additional exploration activities on the public land portions of the Project as outlined in the Proposed Action. Further mineral exploration activities on public lands which could result from the Proposed Action would not take place and, thus, would interfere with the MJV's effort to discover additional precious metal resources or reserves under the public lands. Implementation of the No-Action Alternative would not limit the ability of the State of Nevada to approve the planned operations on private lands.

The U.S. Department of the Interior's surface mining regulations (43 CFR 3809) and current BLM policy contain provisions allowing for mineral exploration and extraction on public lands, as long as such activities do not cause unnecessary or undue degradation of the public resources. The No-Action Alternative conflicts with the General Mining Law of 1872, the Mining and Minerals Policy Act of 1970, and the Federal Land Policy and Management Act of 1976 (FLPMA). The BLM has the responsibility under FLPMA and its regulations to ensure that appropriate State and Federal laws, such as the Endangered Species Act and the National Historic Preservation Act, are complied with; that the proposed operation does not cause undue or unnecessary degradation of the Federal lands; and that reclamation of disturbed areas is addressed. The

BLM can disapprove the proposed exploration activity only if it would violate BLM standards. The BLM is then required to describe changes in the proposed activity needed to meet those standards.

3.0 AFFECTED ENVIRONMENT

3.1 PROPOSED ACTION

The Project is located east of the Owyhee Bluffs in the upper reaches of the Midas drainage. Elevations in the area of the 1996 Project area ranged from 5,300 to 6,850 feet above mean sea level (AMSL). The elevations of the proposed expansion detailed in the 1998 MJV POO Modification range from 5,300 to 7,625 feet AMSL (USGS 7.5 quad maps for Midas, Nev., and Oregon Canyon, Nev.). The higher elevations are generally found in the Dempsey Project area, and the lower elevations are located in the Acme Project area. Slopes range from gentle to steep, and the area is generally vegetated with sagebrush and grasses.

The following critical elements of the human environment are not present or are not affected by the Proposed Action or Alternative in this EA:

- Areas of Critical Environmental Concern
- Farm Lands (prime or unique)
- Floodplains
- Paleontology
- Wild and Scenic Rivers
- Environmental Justice
- Hazardous Materials: No hazardous materials will be used in the drilling program. Oil, fuel, and drilling fluids will be present on site for equipment. In the event of oil or fuel spills, or any similar contamination of the surface or surface waters, MJV will inform appropriate authorities within statutory time frames and will complete cleanup in accordance with directives of the Nevada Division of Environmental Protection and conduct reclamation in accordance with directives from the BLM.

Bureau specialists have further determined that the following resources, although present in the area of the Project, are not affected by the 1998 Proposed Action:

- Recreation
- Access: The 1996 Project was accessed from Elko by traveling north on State Route 225 for approximately 27 miles and proceeding about 25 miles west on State Route 226 to Tuscarora, and then on County Road 724 approximately 42 miles to the town of Midas.

From this county-maintained road, the Acme, Rex-Grande, and Elko Prince Project area were primarily accessed by pre-1981 access roads from the west and south through Sections 33 and 34, T.39N., R.46E., south of the town of Midas. Secondary access to these Project area was attained from pre-1981 access roads initiating in the eastern portion of Section 20, T.39N., R.46E., and the western portion of Section 21, T.39N., R.46E., south of the town of Midas. Travel through the town of Midas was only necessary for access to the Dempsey Project area in Sections 8 and 17, T.39N., R.46E. The maximum speed limit through the town of Midas, for MJV and its contractor vehicles, was 15 miles per hour for safety and dust control.

For the 1998 Project, access from Elko may be obtained by traveling north on State Route 225 for approximately 27 miles and proceeding about 25 miles west on State Route 226 to Tuscarora. From Tuscarora, proceed via Elko County Road 18 toward the town of Midas. From this county-maintained road, the primary access into the Project area would be the mine access road in Sections 27, 33, and 34, T.39N., R.46E. Access may also be obtained by exiting Interstate 80 at Golconda and traveling east on State Route 789 to the intersection of State Route 789 and Humboldt County Road 508. Proceed east on County Road 508 toward the town of Midas. Pre-1981 roads in the eastern portion of Section 20, the western portion of Section 21 south of Midas, the southern portion of Section 16, and Section 22 provide secondary access to the Project area. Travel through the town of Midas would only be necessary for access to Sections 8, 9, and 17, T.39N., R.46E.. The maximum speed limit for MJV employees and contractor vehicles would be 15 miles per hour for safety and dust control.

- Geology and Minerals: As described from the 1996 EA, the topography of the Midas area is characteristic of two physiographic provinces: the Great Basin region of the Basin and Range physiographic province-a region characterized by a series of generally north-trending mountain ranges separated by alluvium-filled valleys-and an area of moderate elevation and low relief that is part of the Owyhee Upland south of the Snake River Plain of Idaho. The Project is located on the northwestern boundary of the Midas Trough, a late Cenozoic age northeast-southwest striking graben which forms the south-facing Owyhee Bluffs.

The rocks of the area of the Project are composed of volcanic flows, tuffs, and vent plugs or domes, which occur as two lithologically and stratigraphically distinct groups but are, in part, chemically similar. The composition of both groups ranges from basalt/gabbro to rhyolite/latite. Felsic ashflow tuffs are dominant in both groups but especially in the younger. The older group, the Midas Sequence, is believed to be 17-15 million years (m.y.) in age, and consists of felsic ashflow tuffs interlayered with and intruded by basaltic flows and gabbroic dikes and sills. The younger group, the Snowstorm Sequence, is 15-9 m.y. in age. The two groups are separated by a third group, the Esmeralda Sequence, of felsic air fall tuffs interlayered with epiclastic sedimentary and fine-grained clastic rocks.

Mineralization occurs in a classic epithermal, volcanic-hosted vein system. The veins usually consist of banded chalcedonic quartz and calcite fissures fillings and fault breccia healed with ore-bearing silica and calcite. Veins occur from a few inches to over 10 feet wide but average five feet. They usually form sharp contacts with silicified, lower-grade envelopes in the country rock. These envelopes may contain vuggy quartz/calcite veinlets or stockwork that may extend well away from the silicification into the hanging wall. The

stockwork mineralization in the country rock that is away from the silicification is often barren but, can on occasion, locally carry high grades of gold and silver.

Ore minerals present in the veins include: free gold, stromeyerite, cerargyrite, and native silver in the upper portions. Gold, tetrahedrite, proustite, argentite, sphalerite, and chalcopyrite occur in the lower levels suggesting some distinct metal zonation. Other minerals located are stephanite, polybasite, silver selenides. Gangue minerals include quartz, chalcedcony, pyrite, calcite with lesser chlorite, and adularia. Occurrences of gold/electrum, naumanite, aguilarite, acanthite, fischesserite along with marcasite, pyrite, pyrrhotite, chalcopyrite, galena, and sphalerite have been reported. The high-grade vein zones often exhibit crustiform to banded chalcedonic silica that often has free-gold as fine blebs within hematite/limonite patches and within silver selenides and pyrite. Also, free gold occurs as specks in individual chalcedonic layers. The silver minerals occur as individual specks throughout the silica and calcite and as single crustiform layers. Silver selenides and electrum often occur togther.

Late Tertiary and Quaternary age deposits cover the lower elevations surrounding the area of the Project. The Tertiary age deposits include tuffs and gravels, and the Quaternary age sediments consist of older alluvium boulder gravel and sand deposits on high-level stream terraces; alluvial fans; and alluvium deposits of silt, sand, and gravel along present streams (Coats, 1987).

The geologic interpretation for the 1998 Project expansion remains consistent with the previously stated 1996 Project area descriptions.

Seismicity in the vicinity of the 1996 Project was considered to be low. During the period from 1868 to 1972, nine earthquakes were detected within a 50-mile radius of the Project. Of these, five earthquakes had a magnitude between 4.0 and 4.9 and four earthquakes had a magnitude between 5.0 and 5.9 on the open-ended Richter scale (Husband, 1975).

Seismicity in the 1998 expanded Project area remains low. Other sources of information for the Project area report that during the period from 1852 to 1996, 40 earthquakes were detected within a 50-mile radius of the Project. Of these, 30 earthquakes had a magnitude of less than 4.0, and nine earthquakes had a magnitude of 4.0 to 6.0. One earthquake with greater than 7.0 magnitude occurred approximately 50 miles away from the Project vicinity (DePolo, 1998).

MJV holds 298 mining claims for locatable minerals within the Project area. In addition, R.L. Foster et al. hold Blue #10 Placer and Bet 96-105, claims. Sand and gravel, a common salable mineral, is found throughout northeastern Nevada and readily available from nearby sites.

- Wild Horses: The 1996 Project was located between two wild horse herd areas (HAs), the Rock Creek HA and the Little Humboldt HA. The extreme southeastern portion of the Acme Project area extended into the Rock Creek HA in Section 34, T.39N., R.46E.. The Rock Creek HA supported a herd population of approximately 813 horses over 180,677 acres. However, no horses have been spotted near this area of the Project. Although the Project did not lie within the Little Humboldt HA, some horses have been spotted near

Thousand Springs (Oregon Canyon) in Section 5, T.39N., R.46E., north of the Dempsey Project area (McKinstry, 1996).

The 1998 POO Modification would extend further into the Rock Creek HA. A 1998 population census revealed approximately 850 wild horses for the Rock Creek HA. The Little Humboldt HA is present though not found within the Project boundary, and no recent population numbers are available. Wild burros are not affected by this Project because there are no individual or wild herds found within Elko County limits (McKinstry, 1998).

- Land Use and Status: Land use from the 1996 EA within and around the area of the Project consisted of livestock grazing, mineral exploration and development, and public recreational use. The area of the Project was zoned by Elko County for open space and provided for a wide variety of rural land uses. Mining exploration is a land use consistent with current zoning. 1996 Project activities did not restrict public access within the area of the Project or through Midas Canyon.

  As part of the 1998 POO Modification, land use and status consists of livestock grazing, mineral exploration and development, and public recreational use, as stated in the 1996 EA. Land use authorizations and encumbrances of record in the proposed Project area include the following: Sierra Pacific Power Company maintains a 25-foot aerial power line right-of-way (N-47570), Elko County maintains an 80-foot road right-of-way (N-50841), and Nevada Bell maintains a 20-foot telephone line right-of-way (NEV-066110) (MJV, ROW application, BLM File No. N-61100) (Figure 3). The Elko County Planning and Zoning Commission re-zoned certain patented lands in the Project area to an industrial status.

3.1.1 Soils

Soils in the area of the 1996 Project were characterized as typical of mountain slopes. Slopes are gentle to steep and runoff is medium to rapid. Erosion hazard by water is moderate to high, and erosion potential by wind is slight. Soils consist of cobbly and very cobbly loams, gravelly and very gravelly loams, rock outcrops, and rubble. The soil associations underlying the majority of the area of the 1996 Project were the Bregar, moderately steep-Bregar-Carstump Association and the Alyan, steep-Bregar-Alyan Association. Soil characteristics for soil series occurring in two different map units are different, because of varying slope and aspect. The characteristics of the soil series comprising the soil associations underlying the majority of the area of the 1996 Project are outlined in Appendix A. As illustrated in Appendix A, a major limitation for seeding suitability is soil depth. These soils are rated fair to poor for seeding because they are arid, droughty, and have a high volume of coarse fragments on the surface.

98032-300 10/98 GRH

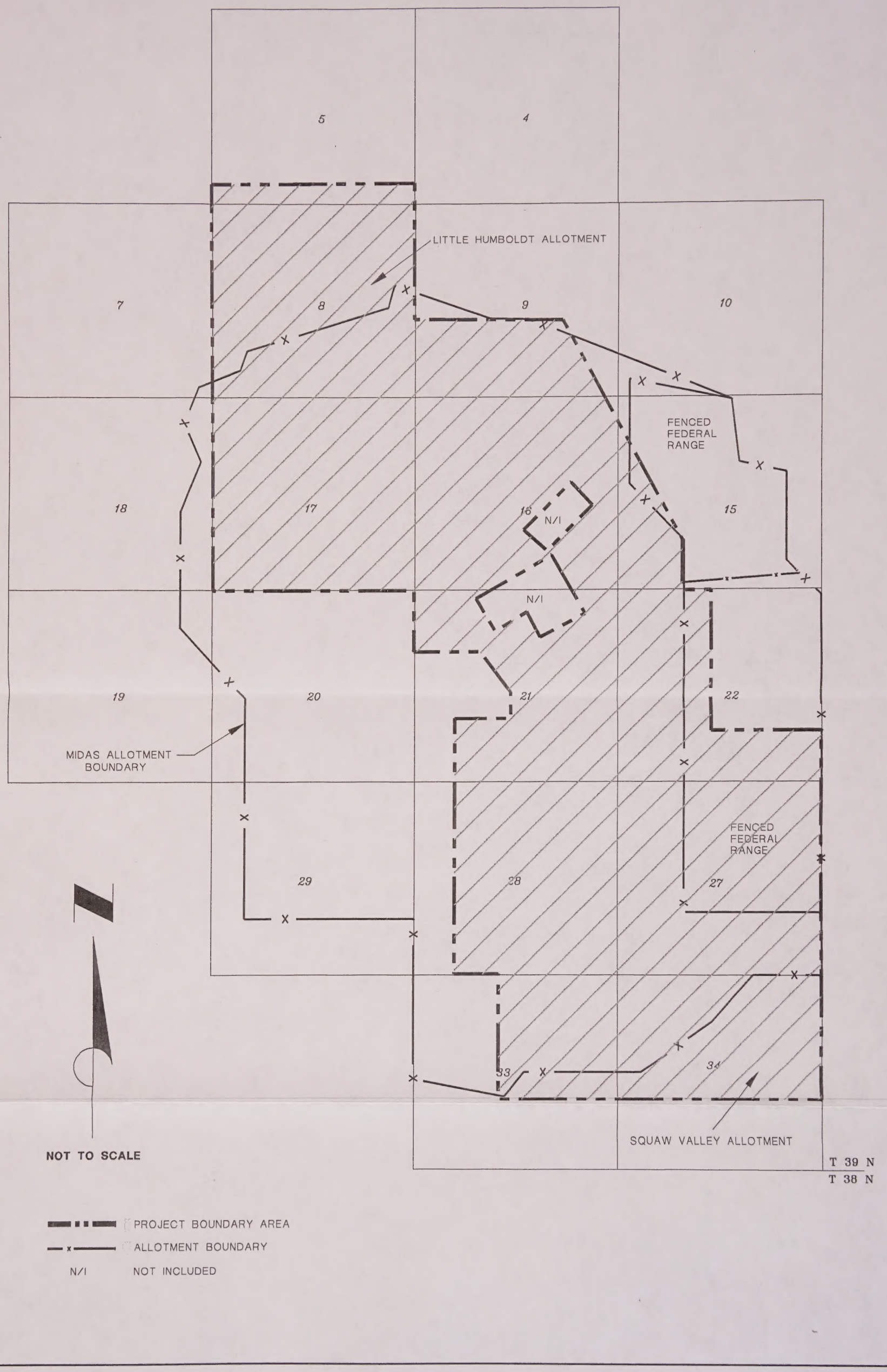
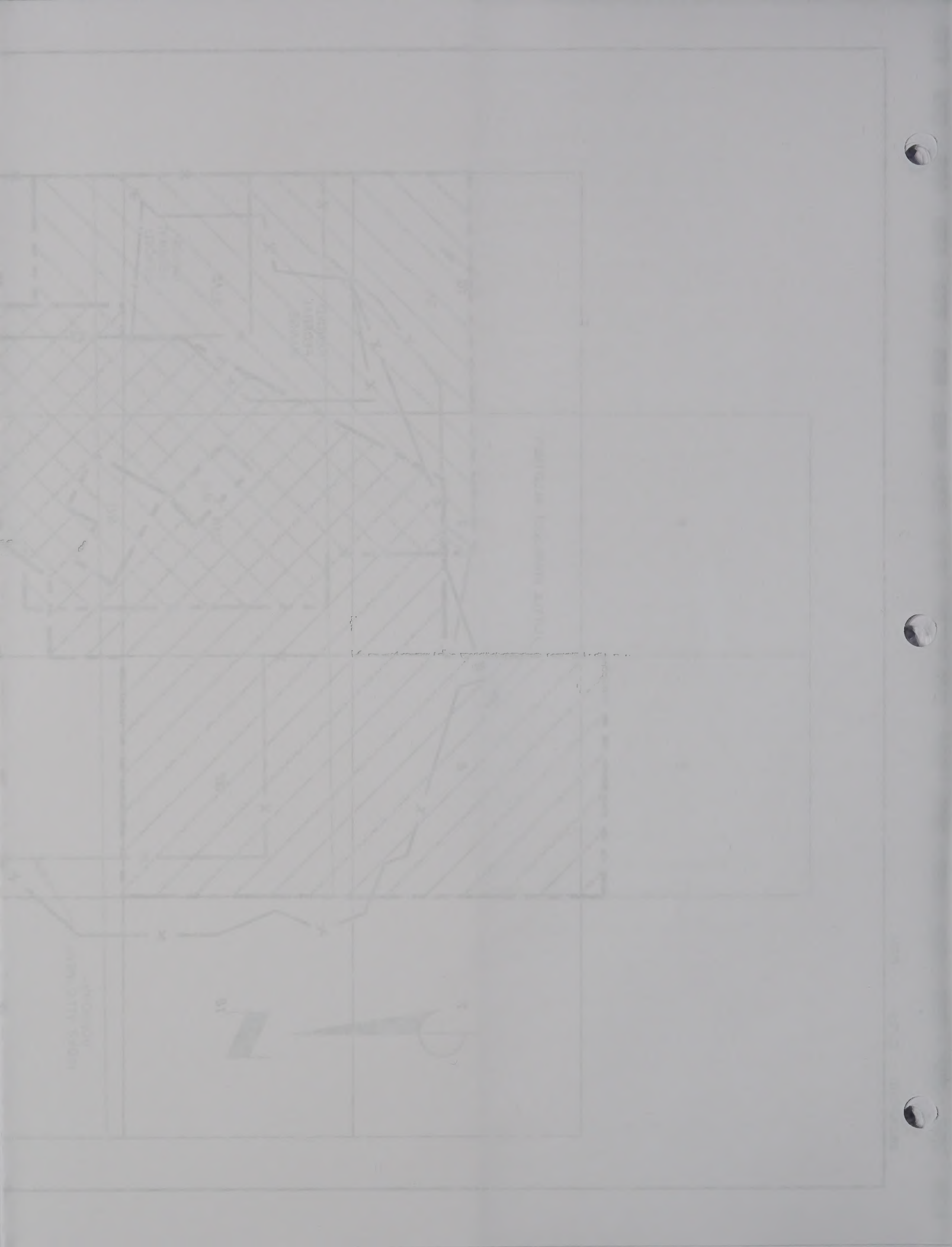


FIGURE 3

GRAZING ALLOTMENTS

MIDAS JOINT VENTURE
ELKO, NEVADA
ENVIRONMENTAL ASSESSMENT



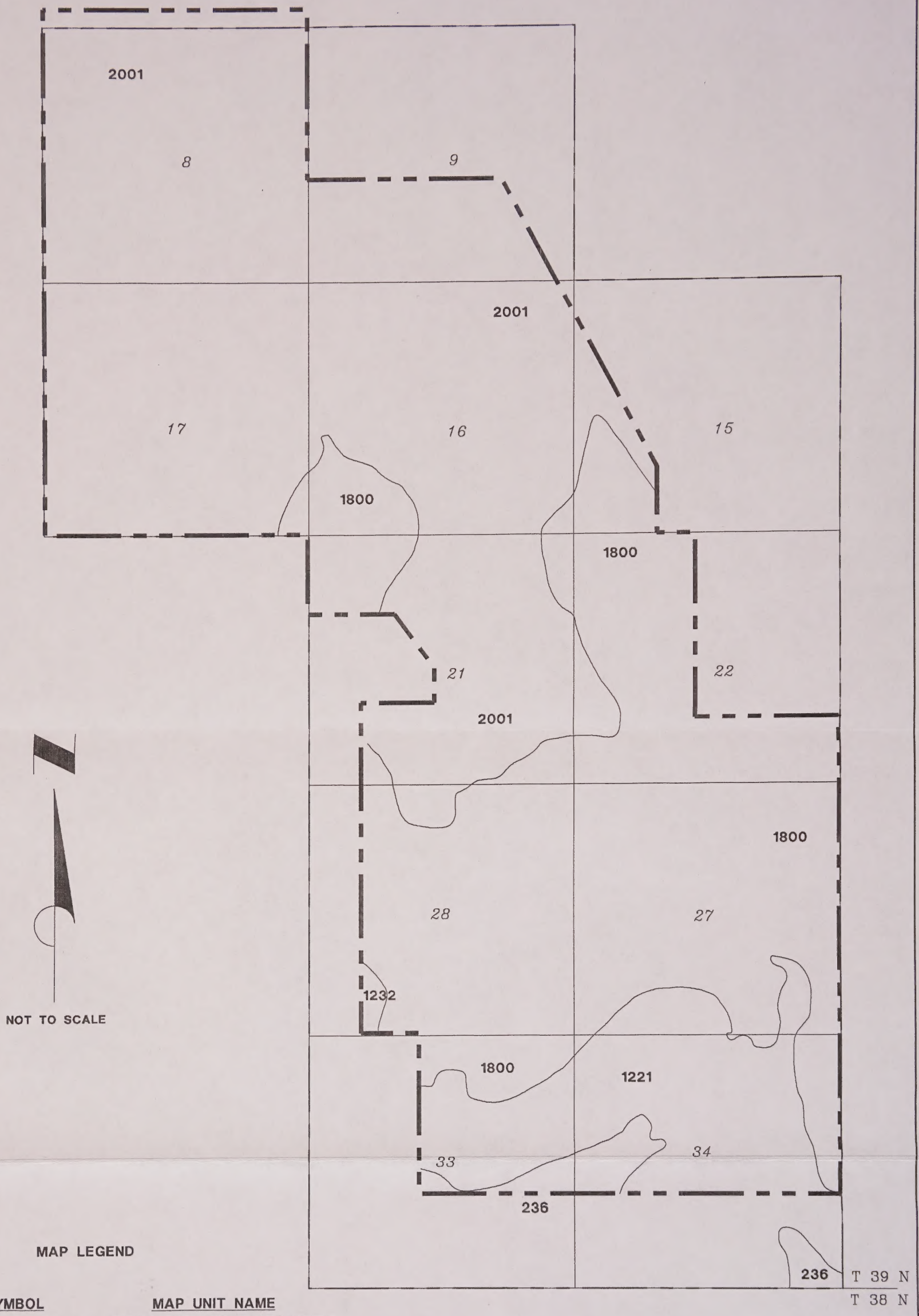
Soils in the area of the proposed 1998 Project area are also characterized as typical of mountain slopes. Slopes range from gentle to steep and runoff is medium to rapid. Erosion hazard by water is slight to high, and the wind erodibility group is classified as very slightly erodible for the majority of the soils within the 1998 Project area. Soils consist of loams and sandy loams, cobbly and very cobbly loams, gravelly and very gravelly loams, rock outcrops, and rubble (USDA, 1997). The soil associations underlying the majority of the 1998 Project area are the Bregar, moderately steep-Bregar-Carstump Association and the Alyan, steep-Bregar-Alyan Association (Figure 4). Soil characteristics for soil series occurring in two different map units are different, because of varying slope and aspect. The characteristics of the soil series comprising the soil associations underlying the 1998 Project area are detailed in Appendix A.

3.1.2 Air Quality

The 1996 Project was located within hydrographic basin No. 63, which is also the number used by the Nevada Division of Environmental Protection (NDEP) to designate the air basin. NDEP monitoring to determine the attainment or nonattainment status of this basin had not been conducted and, therefore, this basin was considered "unclassified." The air quality of the area of the Project is considered good due to the limited population of the area, the absence of concentrated industrial activity, and the lack of natural pollution sources. Suspended particulate matter (PM-10) was the main pollutant of concern and high winds or increased surface disturbance can contribute to elevated PM-10 concentrations. A major source of particulate emissions and dust in and around the Project was vehicular traffic on unpaved roads. No data was available regarding the existing levels of fugitive dust in the area of the Project; however, fugitive dust levels were presumed to be limited because of the lack of emissions sources.

The proposed 1998 exploration activity is located within the hydrographic basin No. 63, which still remains "unclassified" by the NDEP (Cripps, 1998). There are no point sources that can be identified with the Project, and any PM-10 or PM-2.5 emissions created from the exploration activity would be considered fugitive. No data is currently available regarding the fugitive dust levels in the Project area. The Golconda Station, which is the closest weather station, collects temperature and precipitation but not wind data. The average annual temperature from 1989 to 1996 was 50 degrees Fahrenheit. The average annual precipitation from 1989 to 1996 was 7.73 inches, mainly occurring December through March.

98032-300 10/98 GRH



NOT TO SCALE

MAP LEGEND

MAP UNIT SYMBOL	MAP UNIT NAME
236	BIOYA-WIELAND-KLECCCKNER
1221	HUNNTON, MODERATELY STEEP-HUNNTON-FULSTONE
1232	FULSTONE-FULSTONE, COBBLY LOAM-WIELAND
1800	BREGAR, MODERATELY STEEP-BREGAR-CARSTUMP
2001	ALYAN, STEEP-BREGAR-ALYAN

[Source: Soil Survey of Northwest Elko County Area, Nevada, Parts of Elko and Eureka Counties, USDA Natural Resources Conservation Service, (USDA, Published 1997)]

FIGURE 4

SOIL SURVEY MAPPING UNITS

MIDAS JOINT VENTURE
ELKO, NEVADA
ENVIRONMENTAL ASSESSMENT

3.1.3 Water Resources

During 1996, several springs were identified within the 1998 Project area. Analysis of the Elko County geologic map indicated that these springs appear to be controlled by faulting. The only perennial drainage identified to be within the 1996 Project area was the portion of Midas Creek located in the west ½, Section 9, northwest ¼, Section 16, and the northeast ¼, Section 17, T.39N., R.46E. Midas Creek flows south between the Dempsey and Elko Prince Project area.

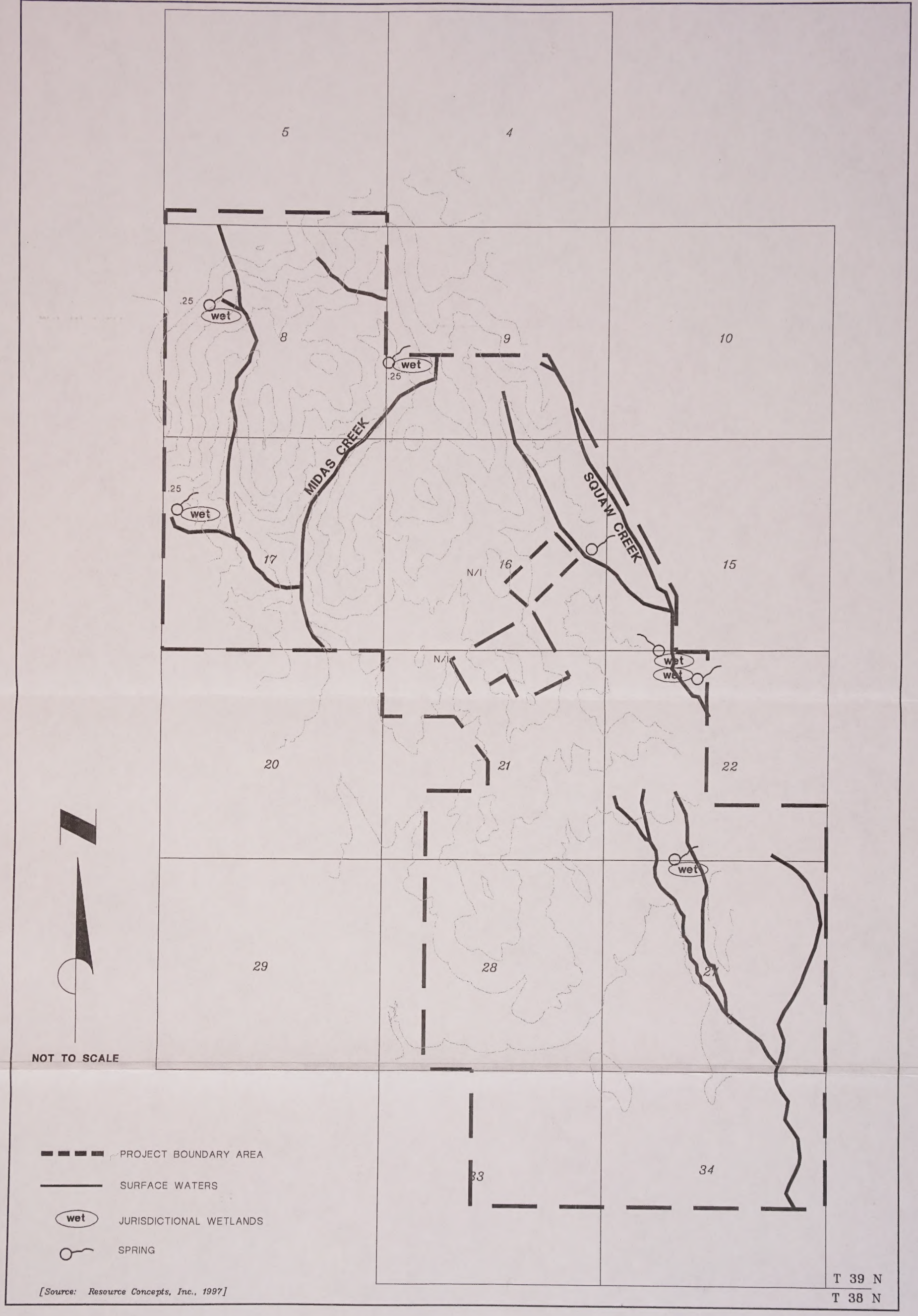
In June 1997, a jurisdictional delineation survey was conducted over the proposed 1998 Project area (Resource Concepts, Inc., 1997). The purpose of this survey was to verify the location and extent of Waters of the United States (WOUS), determine the location and extent of any additional WOUS within the expanded Project area, and verify plant species present in grazed wetlands previously delineated by Western Botanical Services, Inc. (WBSI).

The hydrology of the 1998 Project area was determined to be within the Humboldt River drainage system, an intra-state river (RCI, 1997). The Project is in the Willow Creek Valley portion of the Humboldt River basin (Marchio, 1998) and includes the South Fork of the Little Humboldt River and Squaw Creek. In 1997, Resource Concepts, Inc. identified Midas Creek and Squaw Creek as perennial waters within the Project area. Several ephemeral channels may be active dependent upon the level of spring system recharge. Typically, these ephemeral drainages flow only during periods of spring snowmelt and high intensity rainfall (Figure 5).

None of the proposed activities associated with the 1998 Project would be conducted within or immediately adjacent to the springs, Midas Creek, or Squaw Creek.

Based on measurements of static water level elevations in monitoring wells from May through June 1997, the anticipated groundwater flow direction is to the south/southeast in the vicinity of the mill, tailings, and temporary rock storage facilities on private land in the Acme Main area. The depths to groundwater vary from six feet to 149 feet in this part of the Project area. Depth to first water from selected exploration borings indicate that Well W96-1 and Orphan Boy have water depths of six feet and 8.1 feet, respectively. W96-1 is located in the NW1/4 of Section 22, T.39N., R.46E., east of the town Midas in the central part of the MJV Project area. Orphan Boy is located in the SW1/4 of Section 27, T.39N., R.46E., in the southeast portion of the Project area (Midas Joint Venture, 1997).

98032-300 10/98 GRH

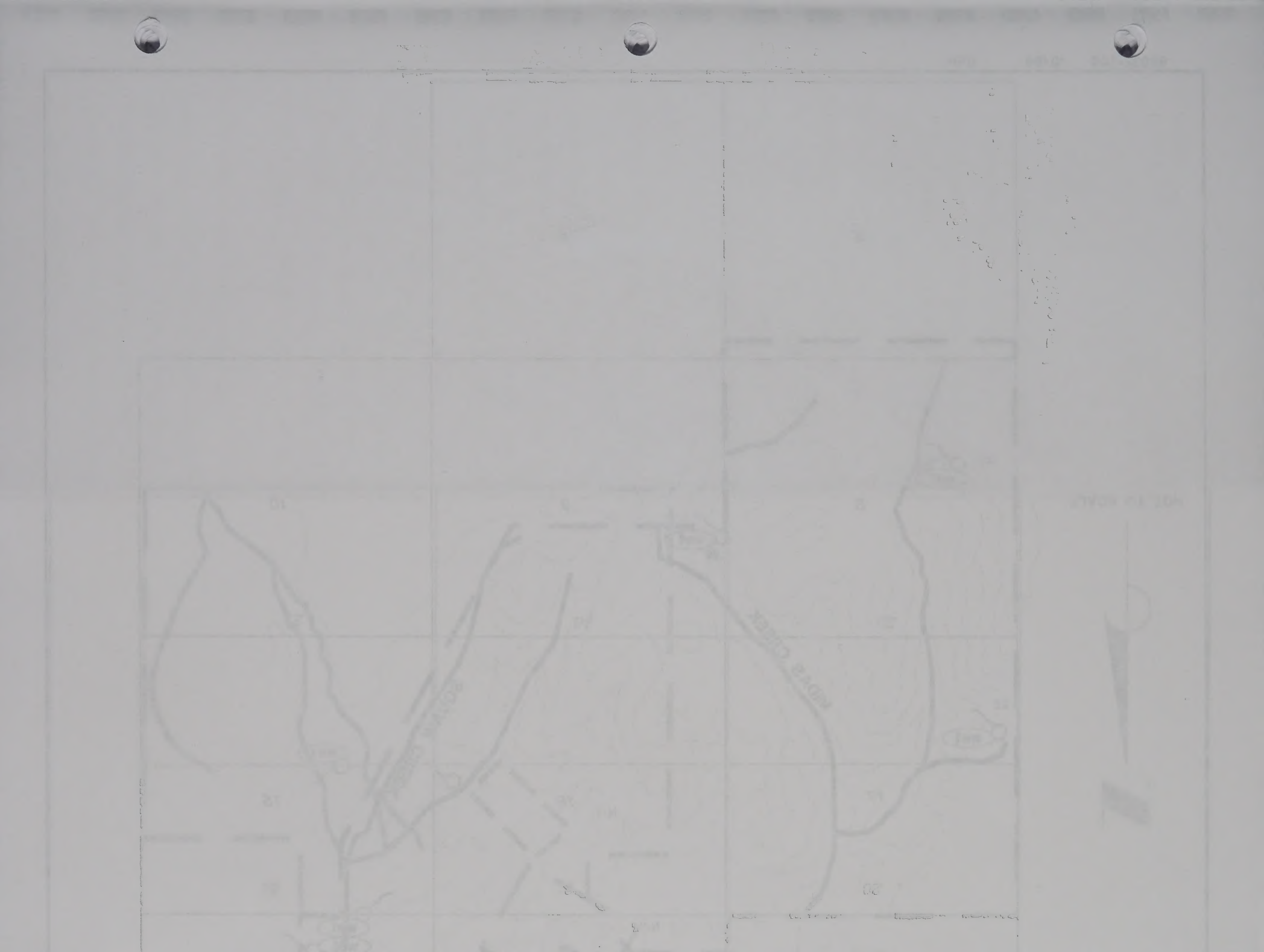


[Source: Resource Concepts, Inc., 1997]

FIGURE 5

SURFACE WATERS/ WETLANDS

MIDAS JOINT VENTURE
ELKO, NEVADA
ENVIRONMENTAL ASSESSMENT



The municipal drinking water supply for the town of Midas is a groundwater well located in Section 17, T.39N., R.46E. The elevation of the wellhead is 5,860 feet, and the depth to water is approximately 120 feet. Production history for the well has been erratic, with production capability decreasing during the dry season. The municipal water supply system consists of a storage tank at the wellhead and pipeline extending south through Midas Canyon from the tank to the town. The water pipeline is shallowly buried below the surface adjacent to the Midas Canyon Road between the wellhead and Midas in Sections 17 and 20, T.39N., R.46E. and, at some locations, crosses under the road. A Wellhead Protection Area (WHPA), as defined under the Safe Drinking Water Act Amendments, has not been established.

3.1.4 Wetlands/Riparian Zones

There were no known wetlands within the 1996 Project area. A riparian zone habitat was identified along the portion of Midas Creek which flows through Sections 9, 16, and 17, T.39N., R.46E., between the Dempsey and Elko Prince Project area.

A total of seven wetlands have been identified within the 1998 Project area. Four wetlands were identified in the Wetland Identification and Delineation Report (WBSI, 1996), although only three were determined to be within the study area. Two of these wetlands are located in the northern half of Section 22, and the third is located along the northern boundary of Section 27, T.39N., R.46E.

Three wetland areas were identified in the 1997 Jurisdictional Delineation Report (Resource Concepts, Inc., 1997) conducted on the proposed 1998 Project expansion areas: NW1/4 of Section 17; SW1/4 of Section 8; and SW1/4 of Section 9, T.39N., R.46E., in the general vicinity of the Dempsey area (Figure 5).

None of the proposed activities associated with the Project would be conducted within or immediately adjacent to these identified wetlands.

3.1.5 Biological Resources

3.1.5.1 Vegetation

As described in the 1996 EA, the Project was located at elevations between 5,300 and 6,850 feet AMSL, principally within a homogeneous sagebrush steppe community, with narrow corridors of riparian vegetation along drainages. A list of vegetation species identified during the 1996 and 1998 cultural resource inventory field surveys is included in Appendix A.

The well-drained, deeper soils of the area of the Project support tall sagebrush, while rocky soils are dominated by low sagebrush. Grasses, consisting primarily of Bluebunch wheatgrass, Great Basin wildrye, and Sandberg's bluegrass, grow interspersed among the sagebrush. Cheat grass, peppergrass, and black mustard are dominant in areas of ground disturbed by either mining or ranching activities. Buckwheat, western serviceberry, and desert thorn provide edible seeds for wildlife. Herbaceous forbs including native wild onion and balsamroot are valued food sources for wildlife and are found at elevations above 6,000 feet AMSL.

As part of the proposed 1998 expansion, additional areas of sagebrush steppe communities and some riparian and upper mountain slope vegetation communities would be included in the Project area. The expanded Project area would be located at elevations between 5,300 and 7,625 feet AMSL. Mountain and upper slopes are dominated by the Big Sagebrush and Little Sagebrush Communities, and also include mountain mahogany, rabbitbrush, serviceberry, and bitterbrush (WCRM, 1998).

Riparian communities associated with the Midas Creek and Squaw Creek areas are represented by relatively dense patches of wild rose, currant, chokecherry, serviceberry, and stinging nettle (WCRM, 1998). Horsemint, rabbitfoot grass, buttercup, baltic rush, and Kentucky bluegrass may also be present in these areas (Resource Concepts, Inc., 1997). Trees, which are rare in the Project area, may include aspens in isolated groves at spring heads and along spring-fed drainages in the northern portion of the Project area. Cottonwoods and willows grow intermittently along the perennial watercourses (WCRM, 1998).

3.1.6 Noxious Weeds

The plant species listed in Appendix G have been identified by the BLM as invasive/exotic non-native plant species (weeds) for the state of Nevada. No noxious weed problems were identified by the BLM during preparation of the 1996 EA.

BLM conducted an inventory of noxious weeds in the vicinity of the Project area and is presently continuing to collect data. Until the inventory is completed, it is unknown what specific species occur on or adjacent to the MJV Project area.

3.1.7 Threatened, Endangered, and Sensitive Plant Species

For the 1996 EA, consultation with the Nevada Natural Heritage Program revealed no records of threatened, endangered, rare, or sensitive plant species in the area (Cooper, 1996) (Appendix B).

For activities proposed in the 1998 POO Modification, consultation letters were mailed to Nevada Department of Wildlife (NDOW) and U.S. Fish and Wildlife Service (USFWS) outlining the 1998 activities for MJV's modification. NDOW and the USFWS acknowledge there have been no major changes in populations for the Project vicinity (Lamp, 1998 and Williams, 1998). This is consistent with the BLM's understanding that there are no threatened, endangered, rare or sensitive plant species within the expanded Project area (Price, 1998).

3.1.8 Wildlife Resources

In the 1996 Project area, wildlife species inhabiting the area in and around the Project were typical of species in low mountains and foothills in the Great Basin. Adequate cover, year-round forage, and a diversity of habitat types exist, but permanent water is a limiting feature of the area as it is in much of Nevada.

Mammals typical of the area included mule deer, coyote, jackrabbit, mountain cottontail, and various rodents. Reptiles in the Project area include rattlesnakes. The area including the 1996 Project was designated by BLM as "other yearlong range" for mule deer and was not considered crucial seasonal habitat. A bighorn sheep use area was located approximately three miles west of the Project along the Owyhee Bluffs.

The area of the 1996 Project lacked nesting habitat for golden eagles or redtail hawks, which prefer the cliff habitat of the nearby Owyhee Bluffs. Swainson's hawks have occurred in the area of the 1996 Project (Erickson, 1996). Confirmation of raptor sightings or actual raptor population counts within the area of the Project were unavailable.

Game birds were limited in the 1996 Project area but may have included sage grouse and chukar (Erickson, 1996). Sage grouse strutting grounds were documented in Sections 4, 8, and 32, T.39N., R.46E. The strutting ground nearest to the 1996 Project was located in the SE¼ of the NW¼, Section 8, T.39N., R.46E., slightly northwest of the Dempsey Project area.

For the 1998 POO Modification, mammals typically found in the area include mule deer, pronghorn antelope, coyote, mountain lion, jackrabbit, mountain cottontail, pygmy rabbit, and various rodents. Reptiles including rattlesnakes are found as well. The Project area is still designated by BLM as "yearlong range" for mule deer and is not considered crucial seasonal habitat. Bighorn sheep are well established to the west of the Project boundary area along the Owyhee Bluffs (Wilkinson, 1998).

No new raptor population counts are available for the Project area, and due to the lack of nesting habitat, no birds of prey are expected to nest within the Project area. Ferruginous hawk nesting territories have been recorded within four miles of the Project area (Wilkinson, 1998).

Chukar are currently found within the exploration Project boundaries.

3.1.9 Threatened, Endangered, and Sensitive Wildlife Species

In the 1996 EA, consultation with the Nevada Natural Heritage Program revealed the occurrence of Townsend's big-eared bat, a BLM-designated State Sensitive Species, in the area of the Project. This species was recorded in the NW¼, Section 16, T.39N., R.46E. (Cooper, 1996) (Appendix B). No other listed or BLM-designated sensitive wildlife species were identified in the area of the 1996 Project.

For the 1998 POO Modification, a Threatened, Endangered, and Sensitive Species Survey for the MJV Project was completed by Resource Concepts, Inc., in November 1997. The survey area encompassed the acreage proposed for further exploration activity. Resource Concepts, Inc., acknowledged that bat species inhabited various abandoned adits within the 1998 Project area. NDOW and BLM confirm Townsend's big-eared bats inhabiting an adit within the Project area, Section 16, T.39N., R.46E. (Wilkinson, 1998). Bat maternity roosts may exist in the adits found within the Project area. Consultation letters were mailed to NDOW and USFWS outlining the 1998 activities for Midas Joint Venture POO modification. The NDOW and USFWS acknowledge there have been no major changes since the 1996 EA, in wildlife population within the Project vicinity.

Western sage grouse has been designated as a Nevada BLM Sensitive Species by the State Director, in cooperation with the State of Nevada Department of Conservation and Natural Resources. BLM policy is to provide the same level of protection as is provided for candidate species in BLM Manual 6840.06 C. Sage grouse are currently found within the exploration Project boundaries. A sage grouse strutting ground exists in the SE¼ of the NW¼, Section 8, T.39N., R.46E., within the Dempsey Project area.

3.1.10 Wilderness

The 1996 EA identified the designated wilderness area nearest to the Project as the Santa Rosa Wilderness, located approximately 50 miles northwest. There were 102 units of public land managed by the BLM in Nevada which were classified as Wilderness Study Areas (WSAs). The BLM had conducted studies for each WSA to recommend to the Secretary of the Interior which WSAs are suitable or unsuitable for inclusion in

the National Wilderness Preservation System. The WSA closest to the area of the Project was the Little Humboldt River WSA, approximately 0.8 mile north of the Dempsey Project area (USDI, 1992). About 70 percent of the Little Humboldt River WSA had been recommended as suitable for wilderness designation (USDI, 1987). The entire WSA has been managed to prevent impairment of the wilderness values and would continue to be administered under the Interim Management Policy (1995) until Congressional action is taken.

For the 1998 POO Modification, the closest WSA is the Little Humboldt River WSA, with the southernmost boundary less than one mile north of the Project boundary. An access road, just outside the northern boundary of the Project area, Section 5, T.39N., R.46E., borders the Little Humboldt River WSA. The BLM has conducted studies for each WSA to recommend to the Secretary of the Interior which WSAs are suitable or unsuitable for inclusion in the National Wilderness Preservation System. About 70 percent of the Little Humboldt River WSA has been recommended as suitable for wilderness designation (USDI, 1987).

3.1.11 Cultural Resources

3.1.11.1 Prehistory and History

The 1996 and 1998 Projects are situated in the extreme northwestern portion of the traditional ethnographic territory of the Western Shoshone, slightly north of the area attributed by Steward to the Tosawihi ('White Knives') Shoshone. Recent data indicate that the Tosawihi Shoshone spent their winters in small camps along the Humboldt River near Battle Mountain, approximately 40 miles south of the town of Midas. During dry months, the Tosawihi engaged in subsistence activities, traveling great distances to forage for pinyon nuts near Austin and salmon in the Snake River before returning to Battle Mountain for tribal festivals. According to Steward (1938) the Tosawihi frequented the hills above Rock Creek to collect the opalite toolstone for which the group is named (Ataman et al., 1995).

The Tosawihi shared a boundary with the Northern Paiute and, by most accounts, had friendly relations. The Northern Paiute likely visited the area of the Project and the opalite quarries. Because both tribes used technologically and stylistically similar tools, it is difficult to distinguish between the two on the basis of the archaeological record.

Prior to gold discovery in the Midas area, there was little Euro-American settlement. Most activity between 1828 and 1860 was located in the Humboldt River Valley and included fur trapping, emigration, and railroad construction. A stage line between Paradise Valley and Cornucopia (and later Tuscarora) operated in 1875

and passed 15 miles north of Midas. The Nevada Land and Cattle Company, Ltd. began livestock raising in 1881 in Squaw Valley along Willow and Kelly creeks.

Following the discovery of gold ore in the summer of 1907, a rush the next spring created the town of Midas, which reached a population high of 2,000 (Lincoln, 1982). The Elko Prince Mine, which became the largest in the district, was built in 1907. Small mills were built in the area after 1908; however, production did not substantially increase until 1915, when a 75-ton-capacity cyanide mill was built at Elko Prince (Ataman et al., 1995). Gold, silver, and some copper were mined in the district. Between 1908 and 1920, the district produced slightly over $2 million (actual dollars) (Tingley et al., 1993).

3.1.11.2 Cultural Resources Inventory

As part of the 1996 EA, a Class II Cultural Resources Inventory was conducted on 602 acres of public lands within the exploration areas referred to as Rex-Grande (Main Portion) (268 acres), Acme (Main Portion) (171 acres), and Dempsey (163 acres) in October 1995 (Ataman et al., 1995). The survey did not cover the Rex-Grande (North Portion), Acme (Southwest Portion), and Elko Prince Project area because MJV would utilize existing roads and/or re-open pre-existing access roads to conduct exploration in these areas. Seven new prehistoric sites and two historic sites were discovered within the surveyed Project area. One of these historic sites, the Gold Circle Mining District, was determined eligible for nomination to the NRHP under criteria "a" and "d."

The Gold Circle Mining District encompasses approximately 3,000 acres, in an arc north and east of the town of Midas. This inventory examined about 20 percent of the district. Twenty-six localities were recorded within the surveyed portion of the site. Of these locations within the Gold Circle Mining District site, the survey identified four localities as contributing elements to the National Register value of the district. In addition, 13 localities remain unevaluated and were potentially contributing elements.

Four cultural resource inventory reports have been conducted within the Project area (Appendix D). The total number of cultural properties recorded within the Project during the four inventories is 128. Of these, 97 are localities within site CRNV-12-12425. The remaining 31 properties include both historic and prehistoric sites. There are a total of 45 eligible/contributing properties, 15 unevaluated properties, and 68 ineligible/noncontributing properties. Thirty-two of the 97 localities are eligible and 13 are unevaluated. Twelve sites (other than CRNV-12-12425) are eligible for the National Register, and another two sites are unevaluated (Murphy, 1998).

For the 1998 POO Modification exploration activities, Western Cultural Resource Management, Inc. (WCRM) conducted a Class III Cultural Resource Inventory in the Gold Circle Mining District at Midas. The study area encompassed 2,941 acres located northeast, east, and southeast of the community of Midas. This survey covered areas that surround parcels previously inventoried for cultural resources. WCRM recorded 81 archaeological sites and localities. The BLM in consultation with the State Historic Preservation Office (SHPO), have concluded that 35 sites and/or localities are eligible and meet at least one of the National Register criteria. These sites and/or localities would be added to the list of the previously recorded eligible sites within MJV's entire Project boundary (Appendix D). Forty-four sites and/or localities do not meet any of the criteria. The evaluation of two sites would be deferred, pending the need for further data. These two sites would be treated as eligible until further information is provided.

Of the 35 eligible sites and/or localities, 12 are prehistoric sites and are eligible to the National Register for their scientific potential (criterion D). Eighteen are historic localities within site CRNV-12-12425 (The Gold Circle Mining District), and are considered eligible under at least one of the National Register criteria.

The final five sites/localities contain both historic and prehistoric components. The prehistoric component of one is determined eligible for the National Register but the historic component is not. Two have contributing historic components but ineligible prehistoric components. Both the historic and prehistoric components of the remaining two sites/localities are determined to be eligible (Murphy, 1998).

A total of 264 isolated features were recorded. These features consisted of one to several undatable prospect trenches, pits, or other historic features. A total of 97 isolated artifacts, both prehistoric and historic, were discovered during this Class III survey.

3.1.11.3 Native American Consultation

In accordance with Federal legislation and executive orders, Federal agencies must consider the impacts their actions may have on Native American traditions and religious practices. Consequently, the BLM must take steps to identify locations having traditional cultural or religious values to Native Americans and insure that its actions do not unduly or unnecessarily burden the pursuit of traditional religion or traditional lifeways. The proposed Project lies within lands traditionally occupied by the Western Shoshone.

Traditionally the Shoshone have had close ties with the land. The earth is believed to be imbued with supernatural power and a major religious goal is the acquisition and use of power (taken from Mary K. Rusco

and Shelly Raven, *Background Study for Consultation with Native Americans on Proposed Mining Development within the Traditional Tosawihi (White Knife) Quarry North of Battle Mountain, Nevada, In the Traditional Land of the Tosawihi People, Western Shoshone Nation,* Archaeological Research Services Inc., 1992). Not only the earth, but all animals, plants, and inanimate objects are believed to contain varying degrees of power. This is why traditional Shoshone pray or give an offering when gathering natural resources and why many view virtually any invasive use of the public domain as being detrimental to their belief system and traditions.

While all objects potentially possess power, concentrations of power are found in certain areas and have special significance to the Shoshone people. Such locations may be used for healing, praying, or ceremonies. Other locations, such as those where medicinal plants, basket weaving materials or food resources are gathered may also be crucial to maintaining Shoshone traditions.

Information gathered by ethnographers indicates that the Willow Creek drainage including the Midas, Tuscarora, and Ivanhoe areas is a source of power for the Shoshone (Rusco and Raven 1992). Within the larger Willow Creek area, three specific localities have been identified. Tosawihi Quarry, located 10 miles to the southeast of the Project, is the best documented. Tosawihi is considered important because of the presence of two power spots, because it is the source of white chert that is regarded by some to convey power or to aid in doctoring, and because it is a focal point of ethnic identity for the Tosawihi Shoshone. Little is known of the other two localities. Both are power sources. One, consisting of two springs, is located in the Tuscarora Mountains. The other is a location along a creek south of Midas. The latter is probably on Midas Creek as it is the only creek in the area. Midas Creek borders the southwestern boundary of the Midas Project.

No additional information pertaining to specific areas of traditional or religious importance was obtained during consultation with the Western Shoshone. As part of its legal obligation, BLM consulted with Te-Moak Tribe of the Western Shoshone, the Battle Mountain Band of the Te-Moak Tribe, the Elko Band of the Te-Moak Tribe, the Wells Band of the Te-Moak Tribe, the South Fork Band of the Te-Moak Tribe, and the Western Shoshone Historic Preservation Society. A letter invitation to enter into consultation was initiated by the BLM to these groups on April 2, 1998. Over the next four months the BLM solicited comments and recommendations through numerous phone calls, one field trip, and two meetings between the BLM and the Te-Moak Tribe.

3.1.12 Visual Resources

The landscape of the area consists of a steep, complex terrain of hills and ridges. Soil colors consist of browns, tans, and grays, but are generally obstructed by the overlying vegetation. Dominant vegetation colors are greens, grays, yellows, and tans.

As described in the 1996 EA, the Dempsey Project area was located in a Class III Visual Resource Management (VRM) area. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

The remaining 1996 Project area (Elko Prince, Rex-Grande, and Acme) were located in a Class IV VRM. The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repetition of basic elements (USDI, 1986).

The proposed 1998 Project area would include a portion of the northern Dempsey area which is located in a Class II VRM area (Treiman, 1998). The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

The Class II VRM area is located in the western half of Section 8 and a portion of the northwest quarter of Section 17. Class III VRM areas include the remainder of Sections 8 and 17, the northern half of Section 16, all of Section 9, and a portion of the northern half of Section 15 (Treiman, 1998). The remainder of the 1998 Project area would be located in a Class IV VRM area (Figure 6).

3.1.13 Noise

The 1996 proposed Project was located in a sparsely populated rural area. The town of Midas is located approximately 1,400 feet southwest of the nearest Project area boundary (Elko Prince). However, the nearest

construction and drilling operations were expected to occur in the Rex-Grande Project area, located over a ridge approximately one mile east of the town of Midas. Existing noise levels were generally low, but increased during periods of high winds. One man-made source of noise in and/or around the Project was off-road vehicle activity. Ambient noise level measurements for the area of the Project were not available.

3.1.14 Range Resources

The 1996 Project approved activities and the 1998 proposed modification are both located within portions of two grazing allotments, Midas and Squaw Valley. The Project area is located primarily within the Midas Allotment, which is an "M" category with a #43 priority in the Resource Area; a small portion of the Acme Project area is located within the Squaw Valley Allotment, which is an "I" category with a #13 priority in the Resource Area (USDI, 1987). A Fenced Federal Range (FFR) area is located along the entire eastern edge of the Midas Allotment.

The "M" category designates that the Midas Allotment is managed by the BLM to maintain current satisfactory conditions. The "I" category indicates that the Squaw Valley Allotment is actively managed by BLM for improvements (USDI, 1987). The Midas Allotment is held by Kenneth R. Buckingham, and the Squaw Valley Allotment is held by the Ellison Ranching Company. Both allotments support cow-calf operations during summer and fall grazing. The forage production rate of the land in the Midas Allotment is approximately six acres per animal unit month (AUM), which means that six acres are required to support one cow and one calf for one month. The forage production rate in the Squaw Valley Allotment is approximately ten acres per AUM. Active grazing preferences in the Midas and Squaw Valley allotments are 711 and 26,796 AUM's, respectively.

The 1998 POO Modification also includes a portion of the Little Humboldt Allotment (Figure 3) which is an "I" category allotment with a number one priority. The majority permittee for the Little Humboldt Allotment is Hammond Ranches, Inc. with active cattle grazing preferences of 8,279 AUM's. Ellison Ranching is the minority permittee with sheep grazing preferences of 242 AUM's.

Livestock Key Areas have been established by the BLM to provide BLM personnel locations at which to measure forage production and utilization of the allotment. Of four Livestock Key Areas located within the Midas Allotment, three are located within Project area. Area 2 is located in the Dempsey Project area; Area 3 is located in the Elko Prince Project area; and Area 4 is located in the Acme (Main Portion) Project area (Figure 3).

98032-300 10/98 GRH

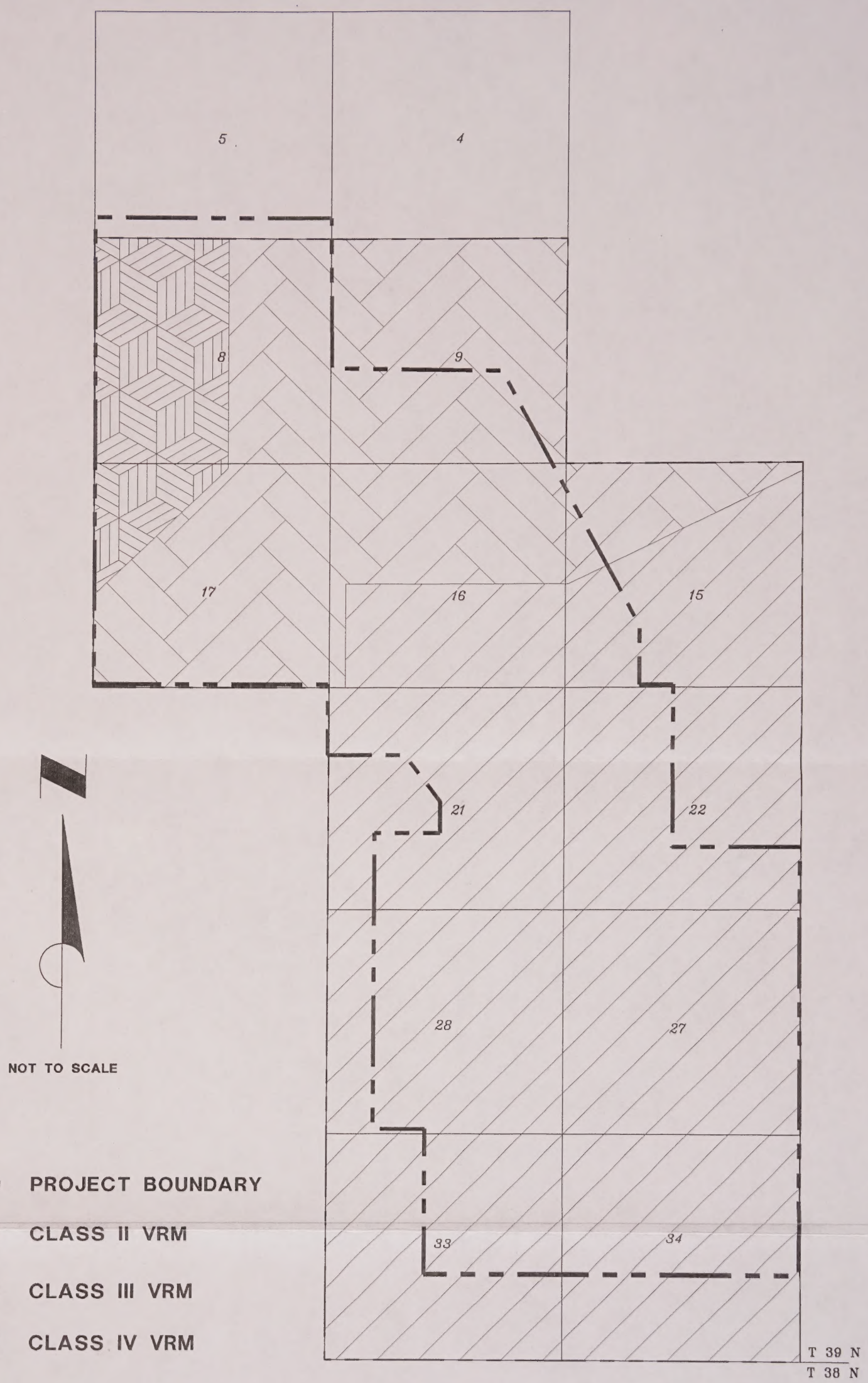


FIGURE 6

VISUAL RESOURCE MANAGEMENT AREAS

MIDAS JOINT VENTURE
ELKO, NEVADA
ENVIRONMENTAL ASSESSMENT

3.1.15 Socioeconomics

The town of Midas has approximately 12 year-round residents. The town experiences an influx of seasonal residents during the summer, when population increases to about 75. Two commercial businesses (bars) are in operation within the town. Community services include a volunteer fire department, a drinking water supply system, and telephone service.

3.2 NO-ACTION ALTERNATIVE

The description of the affected environment for the No-Action Alternative would be the same as that for the Proposed Action.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 PROPOSED ACTION

4.1.1 Soils

The 1996 Decision Record approved up to 43.04 acres of soils disturbance for the construction of drill roads with 31.48 acres on public lands. Wind and water erosion was expected to increase where soils were disturbed until reclamation was successfully completed. Soil loss to wind erosion was projected to amount to approximately 12 tons/year, based on EPA AP-42 emissions factor for wind erosion. The soil loss tolerance factor (or T factor) for the three soils ranged from the minimum of one ton/acre (Bregar) to two tons/acre (Alyan and Carstump). The soil series affected during the 1996 Project had only slight wind erosion potential.

Soil series occurring within the area of the 1996 Project were characterized by moderate to high ratings for water erosion potential. This potential hazard was reduced by measures incorporated in the Project design including ten percent or lower grades for constructed roads and use of waterbars (Sections 2.1.3, 2.1.4). The effects of the 1996 Project on soils were expected to be minimal.

The construction of drill roads associated with the 1998 Project would disturb up to 150 acres of soils, with 100.3 acres on public lands. Wind and water erosion would increase where soils are disturbed until reclamation was successfully completed. Maximum soil loss to wind erosion would amount to approximately 38 tons/year, based on EPA AP-42 emissions factor for wind erosion (assuming all of the 100.3 acres of public lands were disturbed). Visual observations of erosion within the Project area reveal limited evidence of erosion. The soil loss tolerance factor (or T factor) for the six soils within the 1998 Project area ranges from the minimum of one ton/acre (Bregar) to five tons/acre (Wieland). The soil series affected have slight to very slight wind erosion potential.

Soil series occurring within the area of the 1998 Project have slight to high ratings for water erosion hazard. MJV would continue to reduce this potential hazard through measures incorporated in the 1998 Project design including ten percent or lower grades for constructed roads and use of waterbars. The effects of the 1998 Project on soils would be minimal.

4.1.2 Air Quality

The 1996 EA projected soil loss caused by surface disturbance (12 tons/year) and dust caused by travel on dirt roads within the area of the Project would have a slight impact to air quality. To control dust for 1996 activities, the maximum speed limit for MJV and its contractor's vehicles through the town of Midas and on Project area roads was 15 miles per hour. The effect of the 1996 Project on air quality was minimal.

For the 1998 POO Modification, soil loss and dust caused by surface disturbance and dust from vehicles would have a slight impact to air quality. Soil loss due to windblown dust from the entire Project area would not exceed 38 tons/year. This quantity would be reduced through reclamation efforts and dust control measures implemented by MJV. As stated in the 1996 EA, dust would be kept to a minimum by imposing a speed limit control of 15 miles per hour through the town of Midas and on Project area roads. To further limit dust impacts, MJV employees and contractors would be instructed to avoid traveling through the town of Midas to access the drill sites whenever possible. MJV would also apply a magnesium chloride dust suppressant on the road through town to minimize particulate matter in the air. Ongoing reclamation efforts would continue to minimize the size of the disturbed area. The effect of the exploration activities on air quality would be minimal.

4.1.3 Water Resources

As discussed in the 1996 EA, exploration drilling removed only small samples of rock and was not expected to change the characteristics of the rock units or groundwater. All drill holes were plugged pursuant to State of Nevada regulations to protect groundwater resources. Only water or non-toxic drilling fluids were utilized, as necessary, during drilling operations. As discussed above, the rock units which were sampled did not contain large amounts of toxic metals. NAC 534.420, 534.421, and 534.425 were specifically enacted to prevent cross contamination of aquifers. Because all MJV exploration drill holes were plugged in accordance with the NAC, the effects of the Project on water quality were minimal.

The proposed 1998 exploration activities would not change the characteristics of the rock units or groundwater. MJV would continue to plug all drill holes pursuant to State of Nevada regulations to protect groundwater resources. Only water or non-toxic drilling fluids would be utilized, as necessary, during drilling operations. Since all MJV exploration drill holes would be plugged in accordance with the NAC 534.4371, the effects of the proposed 1998 Project on water quality would be minimal.

To meet Project water needs for activities approved in the 1996 EA, MJV withdrew approximately 18,000 gpd from two water wells in Sections 22 and 34, T.39N., R.46E. The existing municipal well is located in Section 17, T.39N., R.46E., approximately 9,800 feet west of the nearest MJV well in Section 22, T.39N., R.46E. Based on water table elevation information, the two MJV wells are located down gradient and/or slightly cross gradient from the municipal well. Given the distance between the wells and the limited temporary nature of the MJV pumping, the effects of the Project on water quantity were expected to be minimal.

To meet Project water needs for the proposed 1998 expanded exploration area, MJV would be withdrawing approximately 99,000 gpd from two water wells in Sections 22 and 34, T.39N., R.46E. The existing municipal well is located in Section 17, T.39N., R.46E., approximately 9,800 feet west of the nearest MJV well in Section 22, T.39N., R.46E. Based on water table elevation information, the two MJV wells are located down gradient and/or slightly cross gradient from the municipal well. Given the distance between the wells and the limited temporary nature of the MJV pumping, it is anticipated that the effects of the Project on water quantity would be minimal.

To avoid potential mechanical effects on the water supply system, such as pipe breakage, MJV would continue to avoid storing any equipment adjacent to the community well site.

4.1.4 Wetlands/Riparian Zones

Surface disturbance and erosion which may have been caused by exploration road construction within the Project area approved in the 1996 Decision Record were located in the Midas Canyon drainage (Dempsey and Elko Prince) and were not expected to have an impact on riparian zone vegetation along the perennial portion of Midas Creek. The amount of disturbance in the Midas Canyon drainage was limited and was located at a distance far enough from Midas Creek to not cause sediment loading. The effects of the 1996 Project on wetlands/riparian zones were minimal.

Exploration road construction within the proposed 1998 Project area located in the Midas Canyon (Dempsey and Elko Prince) and the Squaw Creek drainages are not expected to have an impact on riparian zone vegetation along Midas Creek or Squaw Creek. The amount of surface erosion which may be caused by disturbance in these drainages would be limited and would be located at a distance far enough from Midas Creek and Squaw Creek to not cause sediment loading. The effects of the Project on wetlands/riparian zones would continue to be minimal.

4.1.5 Biological Resources

4.1.5.1 Vegetation

Exploration road construction approved in the 1996 Decision Record temporarily disturbed vegetation in the sagebrush steppe community. This type of habitat is abundant in the Project vicinity and was reclaimed using BLM-recommended plant species. No noxious weed problems were identified by the BLM, and timely reclamation was expected to reduce the spread of noxious weeds over the disturbed area. The effects of the Project on vegetation were minimal.

Exploration road construction activities proposed in the 1998 POO Modification would temporarily disturb vegetation in the sagebrush steppe community. This type of habitat is abundant in the Project vicinity and would be reclaimed using the agency-approved plant species seed mix described in Table 2, Chapter 2 of this document. The seed mixtures that include species that are succulent into the late summer and early fall would benefit both the MJV operations and the Midas townsite; the Midas area has a high wildfire occurrence with the potential for large-scale burns (Kemmerer, 1998). The effects of the expanded Project on vegetation would continue to be minimal.

4.1.6 Noxious Weeds

The proposed 1998 POO Modification activities would have a potential impact on the spread of noxious weeds. Ground disturbance and other road construction activities have the potential to encourage weed infestation, and possible off-road travel could infect new areas. Seeds or parts of noxious weed plants may be transported by vehicles traveling through the area. By implementing the preventative measures detailed in Section 2.9.1, the effects of the Project on the spread of noxious weeds would be minimal.

4.1.7 Threatened, Endangered, and Sensitive Plant Species

The 1996 EA stated that no impacts to any federally listed or sensitive plant species would occur.

For the 1998 POO Modification, no impacts to any federally listed or sensitive plant species would occur.

4.1.8 Wildlife Resources

The 1996 Proposed Action had minimal direct impact on wildlife species. Up to 43.04 acres of existing wildlife habitat were temporarily impacted by road construction. However, no long-term impacts occurred since reclamation and reestablishment of shrub species would likely take place within several years of Project completion. Although some sage grouse strutting grounds were identified in the vicinity of the

Project, none occurred within the Project area. Construction of roads and the operation of drilling equipment possibly disturbed wildlife by creating noise, dust, and human presence. Because MJV does not allow employees to carry firearms or hunt on the Project property during work hours, there should have been little to no impact to wildlife from increased hunting pressure. The wildlife was not known to have been affected by the Project.

The 1998 POO Modification exploration activities would have minimal direct impact on wildlife species. Up to 100.3 acres of wildlife habitat would be temporarily impacted by construction and drilling operations. As previously stated in the 1996 EA, construction of roads and operation of drilling equipment may disturb wildlife by creating noise, dust, and human presence. No long-term impacts are likely to occur due to reclamation and reestablishment of shrub species occurring within several years of project completion. Hunting pressure would not be increased due to the implementation of firearm restrictions enforced by MJV. Through avoidance of sage grouse strutting grounds, firearm restrictions, and reclamation, the Project would not affect the wildlife.

4.1.9 Threatened, Endangered, and Sensitive Wildlife Species

Townsend's big-eared bats have been recorded in the vicinity of the Elko Prince Project area. Noise created by road construction and drilling operations may temporarily interrupt bat foraging activities in the area. Through avoidance of shafts, adits, and riparian foraging areas, the Proposed Action resulted in no appreciable impacts to Pacific Townsend's big-eared bats.

For the 1998 POO Modification, the Threatened, Endangered, and Sensitive Species Survey performed for MJV by Resource Concepts, Inc., identified various bat species in abandoned adits within the Project boundary. Exact species identification is not known, only that bat species inhabit adits. NDOW and BLM confirm Pacific Townsend's big-eared bats inhabiting an adit within the Project area, NW1/4 of Section 16, T.39N., R.46E.; there was evidence that the location is likely part of a "maternity colony." Drilling activities in the area of the "maternity colony" between April 1 and September 15 could negatively impact reproductive success. In addition, drilling in the area of the colony could damage or destroy the viability of the adit for bat habitat. A 0.25 mile buffer zone during the maternity period and avoiding direct impacts to the colony site would avoid or minimize impact to bats.

A sage grouse strutting ground is within the expanded Project boundary in SE1/4, NW1/4 of Section 8, T.39N., R.46E. Drilling operations in the area of the strutting ground between March 1 and mid-May could

disrupt breeding activities. Drilling activities that affect low sagebrush sites could damage or destroy the site as a strutting ground. A 0.3 mile radius buffer during strutting season and avoidance of low sagebrush in the area would minimize the impacts to the sage grouse.

No additional Threatened, Endangered, and Sensitive wildlife concerns were identified by NDOW and the USFWS for the 1998 POO modification. The Project would not affect the Threatened, Endangered, and Sensitive Wildlife Species.

4.1.10 Wilderness

As part of the 1998 expansion, the Little Humboldt River WSA, located less than one mile to the Project boundary, would be avoided. The potential exists for the Little Humboldt River WSA to be damaged should there be vehicle use or road upgrading in the Oregon Canyon area north of the Project area. However, MJV and contractors would not use the Oregon Canyon Road for access. The exploration Project would not affect the WSA's if the Oregon Canyon Road is avoided. If the Oregon Canyon road is used, the WSA would be affected only if Project activities intruded into the WSA.

4.1.11 Cultural Resources

A part of the 1996 EA, protection of identified cultural resources eligible for the NRHP was incorporated in the Proposed Action (Section 2.1.2). Prior to commencing operations, MJV constructed fencing around each of the four eligible localities and one unevaluated locality of the Gold Circle Mining District site to ensure that these localities were not affected by exploration operations. The type of fencing used was consistent with BLM recommendations. The cultural resources were not affected by the Project due to avoidance.

In the 1998 POO Modification, a total of 128 cultural properties, excluding isolated features and isolated artifacts, were recorded during four cultural resource inventories within the Project area. Ninety-seven of these are localities within the historic Gold Circle Mining District which is recorded as site CRNV-12-12425. The remaining 31 properties include both historic and prehistoric sites. The BLM, in consultation with the SHPO, has determined that 32 of the localities contribute to the significance of National Register eligible site CRNV-12-12425. Twelve other sites also qualify for listing on the NRHP. Thirteen localities in CRNV-12-12425 and two prehistoric sites remain unevaluated and will be treated as if eligible until an eligibility determination can be made.

In accordance with the National Historic Preservation Act and 36 CFR 800 regulations, the BLM must take into account the effects that the proposed exploration program would have on the 60 eligible/unevaluated sites/localities. This could take the form of damage caused by equipment and vehicles used in the exploration program or illegal/unauthorized collection of artifacts by employees/subcontractors and others associated with the Project. Measures stipulated in Section 4.1.17 would provide a buffer around the sites/localities and would mitigate these effects.

The second type of anticipated effects involves setting, feeling and association (36 CFR 800.9). These affects usually apply to cultural properties that qualify under criteria a, b, or c and are not applicable to sites eligible only for their scientific value (criterion D). In this case, 29 of the eligible localities and the 13 unevaluated localities in CRNV-12-12425 that qualify or may qualify under one or more of the first three criteria (Appendix D). By introducing new roads, drill pads and the associated equipment the settings, feelings and associations of the historic mining localities would be affected. However, if mitigative measures outlined in Section 4.1.17 are followed the effects would be considered temporary and therefore would not be adverse. Should MJV decide to exceed the stipulated limits, data recovery at the affected sites/localities would be implemented (Murphy, 1998).

4.1.11.1 Native American Consultation

The exploration Project lies within the traditional territories of the Western Shoshone. Seven Native American tribes and bands were consulted/notified by the BLM regarding the proposed Project. The responses were varied but no locations were identified that would qualify for listing on the NRHP as traditional cultural properties nor were any areas identified as having significant traditional or religious values as defined by other Federal legislation, executive order or regulation. One Shoshone spiritual location (power spot), identified in the ethnographic literature, apparently lies just outside the Project boundary.

The Shoshone-Paiute Tribe conveyed no specific concerns since significant archaeological sites would be avoided, but asked that they be notified if anything was unearthed during exploration activities. The Te-Moak Tribe, South Fork Band and Wells Band had no concerns. The Western Shoshone Historic Preservation Society/Elko Band state that all archaeological sites of Native American origin are traditional properties of the Western Shoshone Indians and none are to be adversely affected in any manner. The Battle Mountain Band said their concerns were similar to those expressed for previous projects but they would respond by letter. As of September 8, 1998, no letter had been received. The meetings with the Te-Moak tribe were regular BLM-Te-Moak Tribe meetings and were open to all. The meetings were attended by

various individuals, tribal band council members and Te-Moak Tribe council members. There were a number of general comments to the effect that the land still belonged to the Western Shoshone and the BLM had no authority over it. Several individuals stated that former camp sites (in other words archaeological sites) are sacred and raised concerns about impacts to these resources. One individual expressed a general concern about all modern impacts to the land. She believes that modern activity is destroying the spirits contained in the land, the plants, and the animals. These spirits are necessary for Native American life and well being. A chronology of Native American contacts is provided in Appendix F.

Most of these comments, while recognized as valid concerns to the commenters, do not address the purpose of doing consultation/notification, which is to identify areas of traditional or religious significance that might be effected by the Proposed Action. The BLM shares the commenters' concerns as to the need to protect significant cultural resources and as presented elsewhere in this document, measures are being taken to protect historic properties (eligible properties) identified within the Project area. While some Shoshone believe that archaeological sites are sacred and that the artifacts within them belong to the Shoshone, the BLM is mandated to manage cultural resources for the benefit of all the public. The artifacts and archaeological sites, excepting those specifically identified in the Native American Graves and Repatriation Act, are public property.

Although the issue of the power spot near Midas was included in the BLM notification letter and raised during the BLM project presentation in Battle Mountain, no information was provided by the Western Shoshone during consultation. The significance of this location and whether it still plays a role in Shoshone religion and tradition is unknown. Based on the limited information, this spiritual locality is probably located on Midas Creek (probably on private land). The creek is outside the Project boundary so the power spot would not be directly affected.

4.1.12 Visual Resources

The 1996 Project resulted in short-term visual impacts principally affecting the visual elements of line and color. Horizontal and shallow diagonal lines of drill roads caused moderate line contrasts with the natural landscape. Disturbance of vegetation resulting from road construction caused moderate color contrasts. Successful reclamation of exploration roads and revegetation has minimized long-term visual impacts. The effects of the 1996 Project on visual resources were consistent with BLM-prescribed Class III and IV VRM objectives.

The proposed 1998 Project would result in short-term visual impacts principally affecting the visual elements of line and color. Horizontal and shallow diagonal lines of drill roads would cause moderate line contrasts with the natural landscape. Disturbance of vegetation resulting from road construction would cause moderate color contrasts. With successful reclamation of exploration roads and revegetation, long-term visual impacts would be minimized. The effects of the 1998 Project on visual resources in the Rex-Grande, Acme, portions of Dempsey, and Elko Prince areas would be consistent with BLM-prescribed Class III and IV VRM objectives. The Class II VRM objectives for that portion of the Dempsey Area would not be met.

4.1.13 Noise

The noise generated by the 1996 Proposed Action was typical of most construction and mining projects and could have been intense for short intervals. Noise-sensitive wildlife species were expected to avoid the area of the Project temporarily, but would likely return when noise-generating activities ceased. The 1996 Project did not affect noise in the area.

Activities generating noise during the 1998 exploration would not increase from those evaluated in the 1996 EA. Road construction and drilling could generate noise levels up to 95 dBA at 25 feet. For every doubling of distance from a noise source, there is a 6 dBA decrease in noise level. Based on this rate of noise attenuation, as well as attenuating factors such as topography, wind, and atmospheric absorption of sound, it is expected that noise associated with the Project would have no appreciable impacts on the nearest sensitive noise receptors in the town of Midas. As part of the 1998 POO Modification, MJV would ensure all equipment would be properly muffled to maintain low noise level measurements. MJV employees and contractors would also be instructed to avoid traveling through the town of Midas to access the drill sites whenever possible. MJV employees and contractors would adhere to the 15-mile-per-hour speed limit through the town of Midas, and avoid using that route whenever possible to access the active drilling areas.

4.1.14 Range Resources

Activities assessed in the 1996 EA assumed road construction activities were expected to occur completely within the Midas Allotment and result in a temporary loss of 43.04 acres, or about 7.2 AUM's, of cattle forage. The extreme southeastern portion of the Acme Project area was within the Squaw Valley Allotment. Less than ten acres or 1.7 AUM's, could have been temporarily lost to grazing in the Squaw Valley Allotment under this scenario. If all of the disturbance for the Acme area were to occur in the Squaw Valley Allotment, approximately 33.04 acres, or about 5.5 AUM's, were expected to be temporarily lost in the

Midas Allotment. No other impacts on range resources occurred. Disturbed areas were reclaimed using BLM-recommended plant species.

The 1996 EA incorporated measures to protect the three Livestock Key Areas located in the Dempsey, Elko Prince, and Acme (Main Portion) Project area. MJV marked with lath and flagged the Livestock Key Areas to protect them from possible inadvertent disturbance.

As part of the 1998 POO Modification, MJV would continue to protect the three Livestock Key Areas located in the Dempsey, Elko Prince, and Acme (Main Portion) Project area to protect them from possible inadvertent disturbance.

Road construction activities conducted in the expanded 1998 Project area could occur completely within the Midas Allotment and would result in a temporary loss of 100.3 acres, or about 17 AUM's, of livestock forage. No other impacts on range resources are expected. Disturbed areas would be reclaimed using the Agency-approved plant species seed mix described in Table 2.

4.1.15 Socioeconomics

The presence of MJV and contract employees in the town of Midas during activities conducted during the 1996 Project may have caused temporary impacts to the community including: increased traffic; a minor increased use of septic systems and water supply system; and increased business patronage. The impacts of the 1996 Project on socioeconomics was minimal.

The 1998 POO Modification would bring approximately 25 to 35 employees or contractors into the town of Midas during periods of operation, mainly during the summer and fall. As previously stated in the 1996 EA, some employees would maintain residence in company housing, while others would commute from nearby communities. The influx of people into the town of Midas may cause temporary impacts to residents including increased traffic and bar patronage. The effects of the 1998 Project on socioeconomics would be minimal.

4.1.16 No-Action Alternative

As stated in the 1996 EA, implementation of the No-Action Alternative would result in the avoidance of all the identified, project-specific resource impacts resulting from activities on public lands.

For activities proposed in the 1998 plan, implementation of the No-Action Alternative would result in possible loss of mineralized resources due to the MJV ore body not being fully delineated. MJV would continue to conduct exploration activities on private lands. Implementation of the No-Action Alternative would result in avoidance of all the identified, project-specific resource impacts on the 100.3 acres of public lands. The identified, project-specific resource impacts would still be applicable to the 49.7 acres of MJV-controlled private lands.

4.1.17 Mitigation Measures

No mitigation was required for the 1996 EA.

For the 1998 POO Modification, MJV should conduct the following measures to mitigate effects to cultural resources in the Project area. To prevent physical impacts, MJV should maintain a 50-foot buffer around the 60 eligible/unevaluated sites and localities, unless otherwise agreed to by the BLM and MJV. Boundaries of the buffers should be staked with lath or temporarily fenced to BLM specifications by MJV under the supervision of a BLM authorized archaeologist. MJV should also take measures to insure that its employees, contractors and others under its control do not collect artifacts nor damage or vandalize the sites or any artifacts, equipment, buildings, etc. within them. Should the condition of any significant historic locality or prehistoric site be altered during the period of operations, the localities or sites shall be mitigated through data recovery. The cost of mitigation would be the responsibility of MJV.

To lessen effects to setting, feeling, and association of the historic localities eligible under criterion A, C, or D, MJV should implement an aggressive program of concurrent reclamation. Total unreclaimed disturbance associated with surface exploration proposed in the 1998 POO Modification should be limited to 75 acres. If MJV determines that more than 75 unreclaimed acres are needed to continue their exploration; if reclamation proves to be ineffective for substantially decreasing effects to setting, feeling or association; or if avoidance measures do not protect the physical integrity of the historic properties, a mitigation plan, approved by BLM and SHPO should be implemented. For sensitive localities, MJV should recontour and reseed all drill road and pad disturbance in the fall of the year in which the disturbed areas are no longer needed for future exploration activities. The identified sensitive localities are: Locality 75 (the Elko Prince Mine and Mill), Locality 46 (the Jackson/Grant Mine and Getchell Mill) and Locality 66.

MJV should continue working with Ms. Victoria Ford, University of Nevada/Reno Oral Historian and Ms. Dana Bennett, a published authority on the history of Midas, to gather, transcribe and edit interviews with

present and former Midas residents. The oral history interviews should focus on social and community events as well as mining-related issues (Murphy, 1998).

A seasonal restriction within a 0.3-mile radius of the sage grouse strutting ground in SENW of Section 8, T.39N., R.46E. from March 1 to May 15 will be required to minimize disturbances during breeding activities. In regard to the sage grouse strutting ground other than the March 1 to May 15 period, it is also recommended that the mining company examine its drilling and road locations and, as possible, avoid any low sagebrush sites in SENW of Section 8. This recommendation does not preclude any drilling in the general area of concern.

In the event any road work is proposed for the Oregon Canyon Road or any area adjacent to the Little Humboldt River WSA, the BLM should be notified at least two weeks prior to the work. The BLM would conduct a field visit with the operator to delineate the WSA boundary and to discuss avoidance of the WSA. MJV should instruct their personnel and any contract employees working near the Little Humboldt River WSA of the requirement not to drive into the WSA or otherwise cause any surface or vegetation disturbance on or north of the existing road.

At least two weeks prior to any surface disturbance in the Class II VRM area, MJV should submit to the BLM a detailed map of the proposed work. The map should include enough detail so that a Visual Contrast Rating Worksheet can be completed during a field examination. Site specific mitigation measures should be developed by the BLM in cooperation with MJV following completion of the Visual Contrast Rating Worksheet.

MJV should use certified weed-free seed in reclamation activities. Surface disturbances within the project area should be monitored for the development of noxious weeds listed in the POO. MJV should eliminate noxious weeds from all areas disturbed by the operations until final closure. Reasonable measures should be taken to control and eliminate noxious weeds which are within 100 feet of areas disturbed by MJV operations and which appear to be the result of MJV operations (i.e., noxious weeds which appeared after MJV began operations). MJV should identify and record any noxious weed infestations which presently exist and which MJV is not responsible for. A map of the entire operating area and adjacent areas which depicts the areas of noxious weed infestations should be submitted within one year of the approval of the POO Modification. MJV should also submit photographs showing the infestations along with the map. BLM should be consulted before application of any herbicides.

To mitigate the potential negative effects of drilling activities during maternal activities of Pacific Townsend's big-eared bat, it is recommended that no drilling activities occur on or within 0.25 mile of the underground workings within the NW 1/4 of Section 16 between April 1 and September 15. MJV and contractors should avoid any direct drilling activities near the underground working to avoid damaging the bat habitat.

4.1.18 Cumulative Impacts

Past, present, and reasonably foreseeable future actions which affect resources in MJV Exploration area include historic mining (roads, waste dumps, buildings, pits, and workings exposed at the surface), the 1996 exploration plan which included disturbance of 43.04 acres from road and drill pad construction, the Ken Snyder mine on private property which includes an estimated 30 acres for construction of milling facilities, laydown areas, and ancillary facilities, the proposed action which includes 150 acres of disturbance for road and drill pad construction, and other uses of the lands involved such as disturbance for road and drill pad construction, and other uses of the lands involved such as recreational hunting and grazing. There are no other projects known or expected to be proposed or in planning.

However, there is always a possibility of discovery of ore and additional mining. The Ken Snyder mine is an underground mine, although the support facilities and the mill are on the surface. If additional ore is discovered, it is probable that such ore will be mined by underground methods also. Any such expansion of mining will require surface disturbance for facilities supporting the underground mining such as maintenance shops, laydown areas, and underground access. However, any such expansion will probably occur on private land. If any discoveries result in surface disturbance to public lands, a new Environmental Assessment or Environmental Impact Statement would be completed to analyze the impacts.

Given the history of mining in the area and the activity occurring since 1970, the impacts of the proposed action will not appreciably add to the cumulative effects on resources in the Midas area. The potential for cumulative impacts for all resources described under Environmental Consequences of the Proposed Action are addressed below.

4.1.18.1 Soils

Estimating a total surface disturbance of 223 acres from all recent activity including the mining and the exploration plans and 170 (100 miles of 14 foot roads) acres for existing historic disturbance, much of which is being re-used by the current exploration activity results in an overall estimate of 393 acres at maximum

of disturbed soils contributing to soil loss. Extending the analysis in Section 4.1.1, the 393 acres could lose a maximum of 100 tons of soil per year due to wind erosion. Much of the loss is unavoidable as it results from existing roads. Soil loss from new roads and drill pads which will be reclaimed will be reduced to the levels of surrounding undisturbed lands as reclamation proceeds.

4.1.18.2 Air Quality

As soil disturbance increases, there would be additional dust in the air. The primary concern is the town of Midas. Although the proposed action represents a four fold increase in the number of drill holes planned, the tempo of operations decreases from 250 drill holes/year to 200 drill holes/year. In conjunction with the use of magnesium chloride to suppress dust, the cumulative impact is not expected to be measurably different from the direct impacts, although they will occur over a longer period of time.

4.1.18.3 Water Resources

There were no expected or identified impacts to water resources from the 1996 exploration plan. None are expected from the 1998 plan. There are two unlikely but potential effects that are cumulative in nature. Wind-blown soils could possibly degrade the qualities of surface waters such as Midas Creek by adding to sediment load. Such effects are also readily possible from naturally occurring actions such as floods, landslides, and wind-storm dust unrelated to disturbed soils. It seems unlikely that such impacts from non-naturally occurring events would be noticeable.

4.1.18.4 Wetlands/Riparian Zones

Neither direct impacts or cumulative impacts are anticipated.

4.1.18.5 Biological Resources

A maximum of about 223 acres of sagebrush steppe vegetation would be temporarily destroyed. The vegetation would be re-established with reclamation except on permanent roads. Additional exploration or mining could result in additional temporary or, in the case of open pits long-term destruction of sagebrush steppe vegetation.

4.1.18.6 Noxious Weeds

Controlling noxious weeds, required by a proposed stipulation, would reduce or eliminate the potential for noxious weeds to become established in the operating area. Disturbed soils and human activity are two of the factors that promote the expansion of noxious weed activity. The greater the area of disturbance and the

greater the level of human activity, the greater the probability of the introduction of noxious weeds. Failure to monitor and respond aggressively to noxious weed concerns could result in the establishment of noxious weeds in the area.

4.1.18.7 Threatened, Endangered, and Sensitive Plant Species

Neither direct impacts or cumulative impacts are anticipated.

4.1.18.8 Wildlife Resources

Neither direct impacts or cumulative impacts are anticipated.

4.1.18.9 Threatened, Endangered, and Sensitive Wildlife Species

Bats or sage grouse strutting grounds may be affected by the proposed operation, but proposed stipulations should result in minimal or no impact. Both potential impacts are a result of the proposed 1998 exploration plan. There are no identified impacts from other related actions that would result in cumulative effects.

4.1.18.10 Wilderness

Neither the proposed project nor any related action is expected to affect the Little Humboldt River WSA or any other wilderness area.

4.1.18.11 Cultural Resources

Many of the cultural resources in the Midas Joint Venture are historic mining properties and roads. Thus the impacts of concern are from more recent mining activity along with grazing and recreation. Those impacts are primarily related to alterations of the existing landscape such as the construction of new roads and drill pads. These impacts may include damage or removal of artifacts and degradation of the sense of historic mining activities. The current mining exploration and mining diminishes the sense of isolation and history that is usually associated with old abandoned mining properties. Since the Midas area was never a major mining area, is not a tourist destination, and the majority of visitors are involved in mining, such impacts are small. Additionally, the current mining activity will, in time, end, become historic, and create an additional layer of mining history in the Midas area. Stipulations relating to avoiding disturbance to cultural properties, reclaiming as soon as possible, and limiting unreclaimed disturbance to 75 acres will reduce the impact to cultural resources while taking oral histories will help preserve the mining history of the area. It is possible that future mining could impact the cultural resources of the Midas area. Such

impacts would be analyzed by an Environmental Assessment or EIS before future mining would be approved.

4.1.18.12 Visual Resources

The proposed action will allow exploration drilling to continue. Thus, the temporary presence of drill rigs will continue to be obvious on the landscape until at least the year 2003. The proposed action will add up to 150 acres of new disturbance to an estimated 243 acres of existing disturbance. In conjunction with the Ken Snyder Mine, the exploration gives an impression of bustling activity - a stark change from the relatively undisturbed, isolated pre-mining condition. These impacts are all temporary. How temporary depends on the results of the exploration. If the exploration finds nothing, then exploration drilling will most likely end in 2003. If prospects or ore is identified, additional drilling or mining facilities may result. When the exploration terminates, the ore plays out, and all disturbances are reclaimed, the area will not look substantially different than it did in the 1970's, before the current mining boom began.

4.1.18.13 Noise

There would be no cumulative impact due to noise. The 1998 exploration plan is a continuation, at a slower tempo, of operations from the 1996 exploration plan.

4.1.18.14 Range Resources

Considering the 1996 exploration plan, the Ken Snyder Mine, and the 1998 exploration plan, about 37 AUM's will be temporarily lost from the Squaw Valley and Midas Allotments. These temporary losses are minimal and will have no discernible effect on grazing. There are no other presently anticipated projects that would affect grazing.

4.1.18.15 Socioeconomics

Since the 1998 exploration continues the 1996 exploration, although at a slower tempo, the only socioeconomic effect is continued employment of drill rig operators and associated employees. If the exploration discovers valuable ore, it is possible that additional mining facilities might be built which could result in increased construction and employment. However, it seems more likely that any additional ore would be processed at the Ken Snyder Mine resulting in an increased life for the mill rather that increasing employment. This conclusion results from a consideration of the high cost of construction and the type of high grade discontinuous ore bodies that represent the currently known ore reserves. If large continuous bodies of ore were discovered, the economics of future mining would change sharply as would the type of

potential development. Such development, if public lands were involved, would be addressed by a site specific Environmental Assessment.

4.1.18.16 No-Action Alternative

Implementation of a no-action alternative would be contrary to existing mining law and would result in a "takings" issue. Should the no-action alternative be implemented, there would be no direct, project-specific resource impacts. As a result, the cumulative nature of resource impacts from the past, present, and possible future activities in the area would not be changed. There would be a loss of economic activity to drilling companies and the town of Midas as well as the loss of potential discovery of valuable minerals.

4.1.19 Monitoring

Monitoring activities described in the 1996 EA would continue for activities proposed in the 1998 POO Modification and would be sufficient for this action. Site monitoring for stability and revegetation success would be conducted by a consultant twice a year, during the spring and fall, for three years. Monitoring during site inspections would include a visual evaluation of successful establishment of desirable species; vegetation reproduction processes; site stability; and attainment of the revegetation goal. The consultant would submit reports to the BLM.

BLM monitoring would consist of a BLM specialist conducting periodic compliance inspections of the affected Project area. All compliance inspections would be documented in the Project file at the BLM Elko Field Office.

5.0 CONSULTATION AND COORDINATION

5.1 LIST OF PREPARERS

The 1996 EA was prepared by Environmental Management Associates, Inc. (EMA), under a contract with MJV and at the direction of the BLM, Elko Field Office, Elko, Nevada. The following list includes individuals responsible for preparation of the 1996 EA.

Environmental Management Associates, Inc.

Richard F. DeLong	Project Manager
Dr. Terry R. Thomas	Principal
Christina Lovato	Environmental Specialist
Kent Samuelson	Geologist

This 1998 POO Modification was prepared by WESTEC under a contract with MJV and at the direction of the BLM, Elko Field Office, Elko, Nevada. The following list includes the individuals responsible for preparation of 1998 POO Modification.

WESTEC, Inc.

Clyde D. Gillespie	Project Manager
Karen Kinsella	Staff Scientist
Stephanie Hallinan	Staff Scientist

1996 - U.S. Department of the Interior-Bureau of Land Management, Elko District Office

Roger Congdon	Project Lead
Nick Rieger	Geology, Minerals, Hazardous Materials
Kathy McKinstry	Wild Horses
Gary Back	Wildlife, T&E Species (plant and animal)
Tim Murphy	Cultural Resources, Paleontology

Mike Jensen	Range
Evelyn Treiman	Environmental Coordinator, Recreation, Wilderness, Visual Resources
Carol Marchio	Soils, Water Resources

1998 - U.S. Department of the Interior-Bureau of Land Management, Elko District Office

Kirk Laird	Project Lead, Geology
Deborah McFarlane	Hazardous Materials
Kathy McKinstry	Wild Horses
Roy Price	T&E Species (plant)
Tim Murphy	Cultural Resources, Paleontology
Mike Jensen	Range, Vegetation, Wetlands, Riparian, Aquatics
Evelyn Treiman	Recreation, Wilderness, Visual Resources
Carol Marchio	Air, Soils, Water Resources
Carolyn Spoon	Land Use/Status
Ken Wilkinson	Wildlife, T&E Species (animal)
Stan Kemmerer	Noxious Weeds
Bob Miller	Environmental Coordinator

5.2 PERSONS, GROUPS, AND AGENCIES CONSULTED

The following individuals, organizations, and agency representatives were contacted during preparation of the 1996 EA. Where appropriate, specific communications are identified as a reference (Chapter 6, References).

1996 - Midas Joint Venture

Andre Douchane

Ken Snyder

1998 - Midas Joint Venture

Debra Struhsacker

Andre Douchane

Ken Snyder

1996 - Public Agencies

Federal Agencies:

U.S. Department of Agriculture
Natural Resource Conservation Service, Elko District Office:
Paul Blackburn

State Agencies:

Nevada Department of Conservation and Natural Resources
Division of Wildlife, Elko, Nevada:
Dwayne Erickson
Division of Environmental Protection, Bureau of Air Quality:
Steve Hoelscher
Division of State Parks:
Linda Eiseman

Local Agencies:

Elko County, Planning and Public Works Department:
Carl Kennison

1998 - Public Agencies

Federal Agencies:

U.S. Department of Agriculture
Natural Resource Conservation Service, Elko District Office:
Paul Blackburn

U.S. Department of the Interior
U.S. Fish and Wildlife Service, Reno Office:
Selena Werdon

State Agencies:

Nevada Department of Conservation and Natural Resources
Division of Wildlife, Elko, Nevada:
Rory Lamp
Division of Environmental Protection, Bureau of Air Quality:
Colleen Cripps

Local Agencies:

Elko County, Planning and Public Works Department:
Carl Kennison

1996 - Other Organizations

Nevada Natural Heritage Program:
Kevin Cooper

1998 - Other Organizations

Friends of Midas

April 15, 1998 Town Meeting

Native American Consultation

Marvin McDade	Chairperson South Fork Band
Gelford Jim	Chairperson Battle Mountain Band
Nevada Penoli	Chairperson Wells Band
Elwood Mose	Chairperson Te-Moak Tribe
Wilbur Woods	Chairperson Elko Band
Larry Kibby	Director of the Western Shoshone Historic Preservation Society
James Paiva	Chairperson Shoshone-Paiute Tribe
Clarence Andreozzi	Council Member Wells Band
Kevin Brady	Chairperson Yomba Tribe
Maurice Frank	Vice-Chairperson Yomba Tribe

Bernice Lalo	Battle Mountain Band
Donna Comacho	Band Coordinator, Battle Mountain Band
Winona Charles	Cultural Resource Section
Ted Howard	Shoshone Paiute Tribe

6.0 REFERENCES

Ataman, K., S. Stornetta, J. Carter and D. Dugas. (1995). *Inside the Gold Circle: An Archaeological Inventory Near Midas, Nevada.*

Coats, R.R. (1987). *Geology of Elko County, Nevada.* Nevada Bureau of Mines and Geology, Bulletin 101.

Cooper, K. (1996). Nevada Natural Heritage Program, Carson City, Nevada. Personal Communication.

Cripps, Colleen. (1998). Nevada Division of Environmental Protection, Bureau of Air Quality, Carson City, Nevada. Personal communication on April 3, 1998. Contacted by Stephanie Hallinan, WESTEC, Inc., Elko, Nevada.

DePolo, Craig and Diane. (1998). Earthquakes in Nevada, 1952 to 1996, Nevada Bureau of Mines and Geology, map 111.

Erickson, D. (1996). Nevada Department of Conservation and Natural Resources (NDCNR), Division of Wildlife, Region II, Elko, Nevada. Personal Communication.

Evans, Carol. (1998). U.S. Department of the Interior, Bureau of Land Management, Elko Field Office, Elko, Nevada, Aquatic Resource Specialist. Personal communication on April 7, 1998. Contacted by Karen Kinsella, WESTEC, Inc., Elko, Nevada.

Husband, J.J. (1985). Earthquake Epicenter Map of Nevada, 1868 through 1972, Nevada Bureau of Mines and Geology.

Jensen, Mike. (1998). U.S. Department of the Interior, Bureau of Land Management, Range Resources Specialist. Personal communication on April 20, 1998. Contacted by Karen Kinsella, WESTEC, Inc., Elko, Nevada.

Kemmerer, Stanley. (1998). U.S. Department of the Interior, Bureau of Land Management, Elko Field Office, Elko, Nevada, Range Improvement Specialist. Personal communication on April 7, 1998, and October 14, 1998. Contacted by Karen Kinsella, WESTEC, Inc., Elko, Nevada.

Lamp, Rory. (1998). Nevada Division of Wildlife, Elko, Nevada. Letter to Mr. Dave Vandenburg, Bureau of Land Management, dated May 6, 1998.

Lincoln, F.C. (1982). Mining Districts and Mineral Resources of Nevada, Nevada Publications, Las Vegas, Nevada.

Marchio, Carol. (1998). U.S. Department of the Interior, Bureau of Land Management, Elko Field Office, Elko, Nevada, Air, Soils, and Water Resource Specialist. *Comments regarding the MJV EA*, dated September 30, 1998.

McFarlane, Deborah. (1998). U.S. Department of the Interior, Bureau of Land Management, Elko Field Office, Elko, Nevada, Hazardous Materials Specialist. Personal communication on April 7, 1998. Contacted by Karen Kinsella, WESTEC, Inc., Elko, Nevada.

McKinstry, Kathy. (1996). U.S. Department of the Interior, Bureau of Land Management, Elko District, Personal Communication.

McKinstry, Kathy. (1998). U.S. Department of the Interior, Bureau of Land Management, Elko Field Office, Elko, Nevada, Wild Horse and Burro Specialist. Personal communication on April 2, 1998. Contacted by Stephanie Hallinan, WESTEC, Inc., Elko, Nevada.

Midas Joint Venture. (1996). *Plan of Operations/Application for Reclamation Permit, Midas Project, Elko County, Nevada.* February 1996, revised March 1996.

Midas Joint Venture. (1997). *Application for a Water Pollution Control Permit, Ken Snyder Mine*, Elko County, Nevada. July 1997.

Midas Joint Venture. (1998). *Plan of Operations Modification*, February 1998.

Murphy, Tim. (1998). U.S. Department of the Interior, Bureau of Land Management, Elko Field Office, Elko, Nevada, Archaeologist. Personal communication on April 7, 1998. Contacted by Stephanie Hallinan, WESTEC, Inc., Elko, Nevada.

Price, Roy. (1998). U.S. Department of the Interior, Bureau of Land Management, Elko Field Office, Elko, Nevada, Fish and Wildlife Biologist. Personal communication on April 8, 1998. Contacted by Stephanie Hallinan, WESTEC, Inc., Elko, Nevada.

Resource Concepts, Inc. (1997). *Jurisdictional Delineation Midas Joint Venture Project Report.* Prepared for Parsons, Behle & Latimer, Salt Lake City, Utah. November 11, 1997.

Steward, J.H.. (1938). Basin-Plateau Aboriginal Sociopolitical Groups, Smithsonian Institution, Bureau of American Ethnology, Bulletin 120.

Tingley, J., C. Horton, and C. Lincoln. (1993). *Outline of Nevada Mining History.* Nevada Bureau of Mines and Geology, Special Publication 15.

Treiman, Evelyn. (1998). U.S. Department of the Interior, Bureau of Land Management, Elko Field Office, Elko, Nevada, Visual Recreation and Wilderness Resource Specialist. Personal communication on April 7 & 8, 1998. Contacted by Karen Kinsella and Stephanie Hallinan, WESTEC, Inc., Elko, Nevada.

U.S. Department of Agriculture. (1997). *Soil Survey of Northwest Elko County Area, Nevada, Parts of Elko and Eureka Counties*, USDA Natural Resources Conservation Service, 1986 (published 1997).

U.S. Department of Agriculture, unpublished: Preliminary Soil Survey for the Northwest Elko County Area (SSA 763), Nevada, Natural Resources Conservation Service.

U.S. Department of the Interior. (1986). BLM Manual Handbook 8410-1, Visual Resource Inventory, Bureau of Land Management.

U.S. Department of the Interior. (1986). BLM Manual Handbook 8410-1, Visual Resource Inventory, Bureau of Land Management.

U.S. Department of the Interior. (1987). Elko Resource Management Plan Record of Decision, Bureau of Land Management, Elko District.

U.S. Department of the Interior. (1988). National Environmental Policy Act Handbook, BLM Handbook H-1790-1, October 15, 1988, Bureau of Land Management.

U.S. Department of the Interior. (1992). State of Nevada Wilderness Status Map, Bureau of Land Management.

U.S. Department of the Interior. (1993). NEPA Guidebook, Bureau of Land Management, Elko District.

U.S. Department of the Interior. (1996). *Midas Joint Venture Midas Project, Environmental Assessment* BLM/EK/PL-98/XXX, 3809, N16-96-001P, Bureau of Land Management.

U.S. Department of the Interior. (1998). Midas Joint Venture Access Road and Powerline Right-of-way Application, File N-61100, Bureau of Land Management, Elko District, Elko, Nevada.

Western Botanical Services, Inc. (WBSI). (1996). *Wetland Identification and Delineation, Midas Joint Venture*. Prepared for Hydro-Search, Inc., Reno, Nevada. November 1996.

Western Cultural Resource Management, Inc. (WCRM). (1998). *A Cultural Resource Inventory in the Gold Circle Mining District at Midas, Elko County, Nevada.* Volume I-Report, prepared by Stornetta Kearns et al. March 12, 1998. BLM Report No. CRR-1-1658 (P), WCRM Report 97-R-018.

Wilkinson, Ken. (1998). U.S. Department of the Interior, Bureau of Land Management, Elko District, Elko, Nevada. Personal communication on April 7 & 8, 1998. Contacted by Stephanie Hallinan, WESTEC, Inc., Elko, Nevada.

Williams, Robert. (1998). United States Department of the Interior, Fish and Wildlife Service, Reno, Nevada. Memorandum to manager, Nonrenewable Resources, Bureau of Land Management, dated June 4, 1998.

APPENDIX A
SOILS, ORDER III SURVEY DATA

APPENDIX A
SOIL SERIES WITHIN THE 1996 MIDAS JOINT VENTURE PROJECT AREA

Soil Series	Range in Depth to Bedrock	Profile Soil Texture	Permeability	Runoff	Erosion Hazard by Water	Erosion Hazard by Wind
Alyan	20-40"	Loam to clay, gravelly to very gravelly	Slow	Medium to rapid	High	Slight
Bregar	5-12"	Loam to clay loam, very gravelly	Moderately slow	Medium to rapid	Moderate	Slight
Carstump	20-40"	Loam to clay, very cobbly	Slow	Rapid	High	Slight

Source: USDA, unpublished.

APPENDIX A
SOILS IN THE VICINITY OF THE PROPOSED 1998 MIDAS JOINT VENTURE PROJECT AREA

USDA-NRCS Map Unit	Major Soil Series & Surface Texture/ Composition	Classification	Elevation (feet)	Landscape Position/ % Slope	Permeability (Inches/inch)	Available Water Capacity (in.)	Erosion Hazard Water[1] (K)	Wind Erodibility Group[2]	Rangeland Seeding Suitability	Dominant Present Vegetation
236 Bioya-Wieland-Kleckner Association	Bioya very fine sandy loam 45 percent	Fine-loamy, mixed, mesic Xerollic Durorthids	5,100 to 5,200	Fan piedmonts, lower part, 0 to 2% slopes	.60 - 2.0	.15 - .21	.37 - .55	3	Suited, too arid	Wyoming big sagebrush, bottlebrush squirreltail, bluegrass, cheatgrass
	Wieland loam 20 percent	Fine, montmorillonitic, mesic Durixerollic Haplargids	5,200 to 5,300	Fan piedmonts, summit, 2 to 8% slopes	.06 - 2.0	.09 - .18	.28 - .49	5	Poorly suited, rooting depth	Wyoming big sagebrush, bottlebrush squirreltail, bluegrass, cheatgrass
	Kleckner gravelly loam 20 percent	Clayey-skeletal, montmorillonitic, frigid Aridic Argixerolls	5,300 to 5,400	Fan piedmonts, upper part, 2 to 8% slopes	.06 - 6.0	.04 - .17	.05 - .20	7	Poorly suited, rooting depth	Big sagebrush, bottlebrush squirreltail, bluegrass, cheatgrass
1221 Hunnton, moderately steep-Hunnton-Fulstone Association	Hunnton gravelly loam 35 percent	Fine, montmorilonitic, mesic Xerollic Durargids	5,500 to 6,000	Fan piedmonts, backslope, 15 to 30% slopes	.06 - 2.0	.09 - .21	.28 - .49	7	Poorly suited, rooting depth erodes easily	Wyoming big sagebrush, bottlebrush squirreltail, bluegrass, cheatgrass
	Hunnton loam 30 percent	Fine, montmorilonitic, mesic Xerollic Durargids	5,500 to 6,000	Fan piedmonts, summit, 4 to 15% slopes	.00 - 2.0	.10 - .21	.28 - .49	5	Poorly suited, rooting depth	Wyoming big sagebrush, bottlebrush squirreltail, bluegrass, cheatgrass
	Fulstone gravelly loam 20 percent	Clayey, montmorillonitic, mesic, shallow Abruptic Xerollic Durargids	5,500 to 6,000	Fan piedmonts, backslope, 15 to 30% slopes	.00 - 2.0	.12 - .16	.17 - .20	6	Poorly suited, droughty, rooting depth	Bottlebrush squirreltail, bluegrass, low sagebrush
1232 Fulstone-Fulstone, cobbly loam-Wieland Association	Fulstone gravelly loam 35 percent	Clayey, montmorillonitic, mesic, shallow Abruptic Xerollic Durargids	5,000 to 6,000	Intermontane basins, backslope of fan remnants, 2 to 8% slopes	.00 - 2.0	.12 - .16	.50 - 2.0	6	Poorly suited, droughty, rooting depth	Bluegrass, bottlebrush squirreltail, low sagebrush
	Fulstone cobbly loam 30 percent	Clayey, montmorillonitic, mesic, shallow Abruptic Xerollic Durargids	5,000 to 6,000	Intermontane basins, backslope of fan remnants, 8 to 15% slopes	.00 - 2.0	.09 - .16	.50 - 2.0	7	Poorly suited, droughty, rooting depth	Bluegrass, bottlebrush squirreltail, low sagebrush
	Wieland loam 20 percent	Fine, montmorillonitic, mesic Durixerollic Haplargids	5,000 to 6,000	Intermontane basins, backslope of fan remnants, 8 to 15% slopes	.06 - 2.0	.09 - .18	.28 - .49	5	Poorly suited, rooting depth	Wyoming big sagebrush, bottlebrush squirreltail, bluegrass, cheatgrass

APPENDIX A (continued)
SOILS IN THE VICINITY OF THE PROPOSED 1998 MIDAS JOINT VENTURE PROJECT AREA

USDA-NRCS Map Unit	Major Soil Series & Surface Texture/ Composition	Classification	Elevation (feet)	Landscape Position/ % Slope	Permeability (Inches/inch)	Available Water Capacity (in.)	Erosion Hazard Water[1] (K)	Wind Erodibility Group[2]	Rangeland Seeding Suitability	Dominant Present Vegetation
1800 Bregar, moderately steep-Bregar-Carstump Association	Bregar very gravelly loam 45 percent	Loamy-skeletal, mixed, frigid Lithic Xerollic Haplargids	6,000 to 7,000	Mountains, backslope, 15 to 30% slopes	.00 - 2.0	.07 - .10	.05 - .17	7	Poorly suited, droughty, small stones, depth to rock	Bluegrass, low sagebrush
	Bregar very gravelly loam 25 percent	Loamy-skeletal, mixed, frigid Lithic Xerollic Haplargids	6,200 to 7,500	Mountains, summit, 4 to 15% slopes	.00 - 2.0	.07 - .10	.05 - .17	7	Poorly suited, droughty, small stones, depth to rock	Bluegrass, low sagebrush
	Carstump very cobbly loam 20 percent	Clayey-skeletal, montmorillonitic, frigid Aridic Calcic Argixerolls	6,000 to 7,500	Mountains, backslope, 30 to 50% slopes	.00 - 2.0	.10 - .15	.10 - .17	7	Poorly suited, large stones	Big sagebrush, bluegrass, bottlebrush squirreltail, cheatgrass
2001 Alyan, steep-Bregar-Alyan Association	Alyan gravelly loam 35 percent	Fine, montmorillonitic, frigid Aridic Argixerolls	6,000 to 7,500	Mountains, backslope, 30 to 50% slopes	.00 - 2.0	.08 - .16	.10 - .24	7	Poorly suited, rooting depth, erodes easily	Bluebunch wheatgrass, bottlebrush squirreltail, cheatgrass, mountain big sagebrush
	Bregar very gravelly loam 30 percent	Loamy-skeletal, mixed, frigid Lithic Xerollic Haplargids	6,000 to 7,550	Mountains, backslope, 30 to 50% slopes	.00 - 2.0	.07 - .10	.05 - .17	7	Poorly suited, droughty, small stones, depth to rock	Bluegrass, low sagebrush
	Alyan gravelly loam 20 percent	Fine, montmorillonitic, frigid Aridic Argixerolls	6,000 to 7,500	Mountains, backslope, 4 to 15% slopes	.00 - 2.0	.08 - .16	.10 - .24	7	Poorly suited, rooting depth	Bluebunch wheatgrass, bottlebrush squirreltail, cheatgrass, mountain big sagebrush

Source: *Soil Survey of Northwest Elko County Area, Nevada, Parts of Elko and Eureka Counties*, USDA Natural Resources Conservation Service, 1986 (USDA, published 1997)

[1]Water Erosion K Factor - K=water sheet and rill erosion 0.05-0.69; the higher the number the more susceptible to water erosion.
[2] Wind Erodibility Group - 8=not subject to wind erosion; 7=very slightly erodible; 6=very slightly erodible; 5= slightly erodible.

APPENDIX B
PLANT SPECIES OBSERVED IN THE AREA OF THE MIDAS PROJECT

APPENDIX B

PLANT SPECIES OBSERVED IN THE AREA OF THE MIDAS PROJECT (1996 EA)

PLANT SPECIES OBSERVED IN AREA OF MIDAS PROJECT (October, 1995)[1]

Common Name	Scientific Name (Genus-species)
Tall sagebrush	Artemisia tridentata
Low sagebrush	A. arbuscula
Sandberg bluegrass	Poa sandbergii
Cheat grass	Bromus tectorum
Great Basin wildrye	Elymus cinerus
Squirreltail	Sitanion hystrix
Indian ricegrass	Oryzopsis hymenoides
Needlegrass	Stipa sp.
Snakeweed	Gutierrezia sarothrae
Prickly phlox	Leptodactlon pungens
Rubber rabbitbrush	Chrysothamnus nauseosus
Bitterbrush	Purshia tridentata
Buckwheat	Eriogonum sp.
Western serviceberry	Amelancier alnifolia
Desert thorn	Lycium sp.
Wild onion	Allium sp.
Balsamroot	Balsamorhiza sp.
Peppergrass	Lepidium perfoliatum
Black mustard	Brassica nigra
Quaking aspen	Populus tremuloides
Willow	Salix sp.
Wild rose	Rosa woodsii
Chokecherry	Prunus virginiana
Currant	Ribes sp.
Ocean spray	Holodiscus dumosus
Dock	Rumex crispus
Stinging nettle	Urtica urens
Mugwort	Artemisia douglasiana

[1] Ataman, K., S. Stornetta, J. Carter and D. Dugas, 1995: Inside the Gold Circle: An Archaeological Inventory Near Midas, Nevada.

APPENDIX C
CORRESPONDENCE WITH THE NEVADA NATURAL HERITAGE PROGRAM

APPENDIX C

CORRESPONDENCE WITH THE NEVADA NATURAL HERITAGE PROGRAM (1996 EA)

Nevada Natural Heritage Program

1550 East College Parkway, Suite 145
Carson City, Nevada 89710
(702) 687-4245

FEB 1 3 19
EMA, INC. - RE

9 February 1996

Christina Lovato
Environmental Management Assoc
100 W Grove St Suite 100
Reno NV 89509

Dear Christina:

We are happy to comply with your request for information on the sensitive plant and animal species on or near the Midas project area. We searched our data base and maps for the following:

Township 39N Range 46E Section all

Sensitive species that are known to occur on or near the project area are listed on the enclosed printout. Various raptors may also occur throughout the project area. For more complete information on raptors, please contact Gary Herron, Nevada Div. of Wildlife, at (702) 688-1500. Please note that all cactuses, yuccas, and Christmas trees are protected by Nevada state law (NRS 527.060-.120), including species not tracked by this office.

Please note that our data are dependent on the research and observations of many individuals and organizations, and in most cases are not the result of comprehensive or site-specific field surveys. Natural Heritage reports should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

For more specific habitat information on the species, you may contact our Zoologist, Glenn Clemmer, or our Botanist, Jim Morefield at (702) 687-4245.

Thank you for checking with our program. If we can be of further assistance please give us a call.

Sincerely,

Kevin Cooper
Data Manager

SENSITIVE PLANT AND ANIMAL SPECIES ON OR NEAR THE MIDAS PROJECT AREA
Compiled by the Nevada Natural Heritage Program
9 February 1996

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	NNPS STATUS	PREC	TOWNSHIP RANGE	SECTION	LAT	LONG	LAST OBSERVE
Plecotus townsendii ssp	TOWNSEND'S BIG-EARED BAT	C2			S	039N046E	16	411543N	1164739W	1992-05-

PREC:

Precision, or radius of uncertainty around latitude/longitude coordinates:

S = Seconds: within a three-second radius.
M = Minute: within one minute radius, approximately 2 km or 1.5 miles.
G = General: within about 8 km or 5 miles, or to map quadrangle or place name precision only.
U = Unmappable.

STATE STATUS:

Fauna: State protection under NRS 501.331, NRS 501.337, NRS 501.375, NRS 501.386. (Yes /No)
Flora: State protection under NRS 527
CE: Critically endangered
CY: Cactus and Yucca Law
#: Recommended for critically endangered, pending formal listing

NNPS STATUS:

Northern Nevada Native Plant Society Sensitive Species List:

PE - Possibly extinct
W - Watch
D - Deleted
E - Endangered
T - Threatened

FEDERAL STATUS:

The standard abbreviations for federal endangerment status as published in the Federal Register by the USFWS, Office of Endar Species. The status for candidates and their meanings are discussed in each Federal Register notice. The following are the st USFWS abbreviations that pertain to the project area.

C2 = Candidate, category 2

APPENDIX D
COMPILATION OF RECORDED ELIGIBLE SITES WITHIN MJV PROJECT BOUNDARY (1998 EA)

COMPILATION OF ARCHAEOLOGICAL SITES ELIGIBLE AND UNEVALUATED FOR LISTING ON THE NATIONAL REGISTER OF HISTORICAL PLACES

SITES ELIGIBLE UNDER CRITERION A AND D

CrNV-12-12425 Locality 41[1]	*CrNV-12-12425 Locality 43[1]	*CrNV-12-12425 Locality 45[1]
CrNV-12-12425 Locality 64[1]	CrNV-12-12425 Locality 67[1]	CrNV-12-12425 Locality 69[1]
CrNV-12-12425 Locality 74[1]	CrNV-12-12425 Locality 76[1]	CrNV-12-12425 Locality 78[1]
CrNV-12-12425 Locality 82[1]	CrNV-12-12425 Locality 32[2]	CrNV-12-12425 Locality 34[2]
CrNV-12-12425 Locality 37[2]	CrNV-12-12425 Locality 1[3]	CrNV-12-12425 Locality 5[3]
CrNV-12-12425 Locality 6[3]	CrNV-12-12425 Locality 23[3]	CrNV-12-12425 Locality 26[4]
CrNV-12-12425 Locality 29[4]	CrNV-12-12425 Locality 31[4]	

*Locality contain a non-contributing prehistoric component.

[1] BLM Report 1-1658

[2] BLM Report 1-1595

[3] BLM Report 1-2005

[4] BLM Report 1-2005, Addendum

SITES ELIGIBLE UNDER CRITERION D
BLM REPORT 1-1658

CrNV-12-9218	CrNV-12-9231	CrNV-12-9232
CrNV-12-9233	CrNV-12-9234	CrNV-12-9235
CrNV-12-9250	CrNV-12-9252	CrNV-12-9256
CrNV-12-9258	CrNV-12-9270	CrNV-12-9272
*CrNV-12-12425 Locality 40	CrNV-12-12425 Locality 48	CrNV-12-12425 Locality 56

*Locality contain a non-contributing historic component.

SITES ELIGIBLE UNDER CRITERION A
BLM REPORT 1-1658

CrNV-12-12425 Locality 53	CrNV-12-12425 Locality 59/61	CrNV-12-12425 Locality 62
CrNV-12-12425 Locality 65	*CrNV-12-12425 Locality 83	

*Contributing status under criterion D is deferred pending additional research.

SITES ELIGIBLE UNDER CRITERION A, B, AND D
BLM REPORT 1-1658

CrNV-12-12425 Locality 46	*CrNV-12-12425 Locality 75	CrNV-12-12425 Locality 81

*Contributing status under criterion C is deferred pending additional research.

UNEVALUATED SITES ELIGIBLE
BLM REPORTS 1-2005 AND 1-1658

CrNV-12-12425 Locality 2	CrNV-12-12425 Locality 8	CrNV-12-12425 Locality 9b
CrNV-12-12425 Locality 11	CrNV-12-12425 Locality 12	CrNV-12-12425 Locality 13
CrNV-12-12425 Locality 14	CrNV-12-12425 Locality 15	CrNV-12-12425 Locality 18
CrNV-12-12425 Locality 21	CrNV-12-12425 Locality 22	CrNV-12-12425 Locality 24
CrNV-12-12425 Locality 25	* CrNV-12-9236	* CrNV-12-9237

*BLM Report 1-1658

APPENDIX E
CORRESPONDENCE WITH THE NEVADA DIVISION OF WILDLIFE AND THE UNITED STATES FISH AND WILDLIFE SERVICE (1998 EA)

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF WILDLIFE
1100 Valley Road
P.O. Box 10678
Reno, Nevada 89520-0022
(702) 688-1500 • Fax (702) 688-1595

BOB MILLER
Governor

PETER G. MORROS
Director
Department of Conservation and Natural Resources

WILLIAM A. MOLINI
Administrator

BUREAU OF LAND MANAGEMENT
ELKO FIELD OFFICE
1998 MAY 11 AM 7:30

ELKO DISTRICT		
DM		
ADM		
PLAN/NEPA		
LAW ENF		
NON-REN	✓	✓
RENEWABLE		
S. S.		
FIRE		
Kirk		
CF CODE:		
X = ACTION		

May 6, 1998

Dave Vandenberg, Manager
Nonrenewable Resources
Bureau of Land Management
3900 E. Idaho Street
Elko, NV 89801
Attn: Kirk Laird

RE: Scoping, Midas Joint Venture Exploration Project Modification - BLM

Dear Mr Vandenberg:

We appreciate the opportunity to review and provide comments on the subject document. The area identified from your map is low density mule deer spring/summer habitat. There are isolated pockets of high quality deer habitat scattered throughout the project area. Typically this habitat would consist of serviceberry and bitterbrush dominated mountain brush communities. No big horn sheep have been noted in the area, but they are well established to the west on the steep escarpment of the Snowstorm Mountains.

There are sage grouse leks to the east and northwest of the project area. The springs in the project area would be very important to the sage grouse resource, particularly during the summer months when broods are being raised. Chukar populations are established in the entire area. Water sources in the area would also be important to this resource in the late summer months.

Mountain lions and furbearer species common to the great basin desert would be expected to be found in the vicinity of the project area.

Several bat species would be expected to be found in the area. A survey completed in 1992 documented *Corynorhinus townsendii* in the project area. Surveys conducted near Golconda documented the existence of *Corynorhinus townsendii*, *Myotis volans*, and a third species of Myotis. Mine adits have been extensively used as night roosts by wintering rosy finches in several locations in Nevada.

There are burrowing owl and ferruginous hawk nesting territories within four miles of the project area. The project area would include foraging habitat for both species. Other raptor species could also be utilizing the project area as nesting and foraging habitat.

Numerous nongame mammals and birds utilize the mountain brush and sagebrush communities for nesting, foraging and cover. A bird survey data sheet from 1974 is attached providing breeding bird use data for the project vicinity. If you have any questions concerning this input, please feel free to contact me in Elko.

Sincerely,

Duane Erickson

for Rory E. Lamp
Biologist III
1375 Mountain City Highway
Elko, NV 89801
(702) 738-5332

RL
cc: Habitat Bureau
Region II
File

: 004 NAME: MIDAS STRATUM: 88 LAT-LONG: 4118-11629 STATE:

SPECIES	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	197
OHICL CRANE	-	-	-	-	-	-	-	-	3	-	-	
LOCER	-	-	-	-	-	-	-	-	8	-	-	
Y PARTRIDGE	-	-	-	-	-	-	-	-	7	-	-	
KAR	-	-	-	-	-	-	-	-	4	-	-	
RNING DOVE	-	-	-	-	-	-	-	-	20	-	-	
THERN HARRIER	-	-	-	-	-	-	-	-	1	-	-	
-TAILED HAWK	-	-	-	-	-	-	-	-	2	-	-	
INSON'S HAWK	-	-	-	-	-	-	-	-	1	-	-	
N EAGLE	-	-	-	-	-	-	-	-	2	-	-	
E FALCON	-	-	-	-	-	-	-	-	1	-	-	
N KESTREL	-	-	-	-	-	-	-	-	1	-	-	
ROWING OWL	-	-	-	-	-	-	-	-	2	-	-	
ION NIGHTHAWK	-	-	-	-	-	-	-	-	1	-	-	
NED LARK	-	-	-	-	-	-	-	-	4	-	-	
CK-BILLED MAGPIE	-	-	-	-	-	-	-	-	22	-	-	
ION RAVEN	-	-	-	-	-	-	-	-	4	-	-	
OPEAN STARLING	-	-	-	-	-	-	-	-	3	-	-	
TERN MEADOWLARK	-	-	-	-	-	-	-	-	28	-	-	
ER'S BLACKBIRD	-	-	-	-	-	-	-	-	66	-	-	
PER SPARROW	-	-	-	-	-	-	-	-	12	-	-	
ER'S SPARROW	-	-	-	-	-	-	-	-	71	-	-	
CK-HEADED GROSBEAK	-	-	-	-	-	-	-	-	1	-	-	
F SWALLOW	-	-	-	-	-	-	-	-	12	-	-	
GERHEAD SHRIKE	-	-	-	-	-	-	-	-	2	-	-	
THRASHER	-	-	-	-	-	-	-	-	13	-	-	
N ROBIN	-	-	-	-	-	-	-	-	11	-	-	
L SPECIES 26	-	-	-	-	-	-	-	-	0	-	-	
AL INDIV. 302	-	-	-	-	-	-	-	-	302	-	-	

E ROUTE RUN	0629
IME ROUTE STARTED	0440
IME ROUTE FINISHED	0847
EMPERATURE: START	48
FINISH	65
IND: START-FINISH	0-0
KY: START-FINISH	0-0
BSERVER	QUIR

05/12/98 09:27 TX/RX NO.8279 P.004

BUREAU OF LAND MANAGEMENT
ELKO FIELD OFFICE
98 JUN -8 AM 7:30

United States Department of the Interior

FISH AND WILDLIFE SERVICE

NEVADA FISH AND WILDLIFE OFFICE
1340 FINANCIAL BOULEVARD, SUITE 234
RENO, NEVADA 89502-7147

June 4, 1998
File No. 1-5-98-SP-180

Memorandum

To: Manager, Nonrenewable Resources, Bureau of Land Management, Elko Field Office, Elko, Nevada (Attn: Kirk Laird)

From: Field Supervisor, Nevada Fish and Wildlife Office, Reno, Nevada

Subject: Species List for the Proposed Exploration Plan of Operations for Midas Joint Venture, Midas, Elko County, Nevada

In response to your correspondence dated May 1, 1998, we have attached a list of candidate species that may be present within the vicinity of or be affected by the proposed project (Attachment A). To the best of our knowledge there are no listed or proposed species in the project area. This list fulfills the requirement of the Fish and Wildlife Service to provide information on listed species pursuant to section 7(c) of the Endangered Species Act of 1973, as amended. A list of published references dealing with the distribution, life history, and habitat requirements of the candidate species is also attached (Attachment B). This information may be helpful in preparing a biological assessment for this project, if one is required.

Included in Attachment A is a list of other species of concern to the Service that may occur within the project area. The Service has used information from State and Federal agencies and private sources to assess the conservation needs of these species. Determination of the conservation status of these taxa will require further biological research and field study. By considering these species and by exploring management alternatives early in the planning process it may be possible to provide long-term conservation benefits for these species and avoid future conflicts that could otherwise develop. We recommend that you contact the Nevada Natural Heritage Program [1550 East College Parkway, Suite 145, Carson City, Nevada 89710, (702) 687-4245] and the appropriate regional office of the Nevada Division of Wildlife, as well as other local, State, and Federal agencies for distribution data and information on the conservation needs of these and other species of concern.

As a portion of the project area occurs on federally managed land, we have included Attachment C to provide a discussion of the responsibilities Federal agencies have under section 7(c) of the Endangered Species Act and the conditions under which a biological assessment must be prepared by the lead Federal agency or its designated non-Federal representative.

If wetlands or streams are in the vicinity of the proposed project, we ask that you be aware of any potential impacts the project may have on these areas. Discharge of dredged or fill material into wetlands or waters of the United States is regulated by the Army Corps of Engineers pursuant to section 404 of the Clean Water Act. We recommend you contact the Regulatory Section of the Army Corps of Engineers' Reno Field Office [300 Booth Street, Room 2120, Reno, Nevada 89509, (702) 784-5304] regarding the possible need for a permit.

Should the proposed project necessitate the removal of vegetation, we recommend either that vegetation removal be done outside the avian breeding season, or that surveys be conducted prior to vegetation removal to ensure that bird nests are not harmed or that exploration activities do not result in nest failures. Destruction of bird nests and/or their contents may result if these actions are conducted during the avian breeding season and may be a violation of the Federal Migratory Bird Treaty Act.

Please reference File No.1-5-98-SP-180 in future correspondence concerning this project or species list. If you have questions or require further information, please contact Chris Mullen at (702) 861-6300.

For Robert D. Williams

Attachment(s)

ENCLOSURE A

CANDIDATE SPECIES AND SPECIES OF CONCERN
THAT MAY OCCUR IN THE VICINITY OF OR BE AFFECTED BY THE
PROPOSED MIDAS JOINT VENTURE EXPANSION PROJECT,
ELKO COUNTY, NEVADA
(File Number: 1-5-98-SP-180; June 4, 1998)

CANDIDATE SPECIES

Amphibian	
Spotted frog	*Rana luteiventris*

SPECIES OF CONCERN

Mammals	
Pygmy rabbit	*Brachylagus idahoensis*
Spotted bat	*Euderma maculatum*
Small-footed myotis	*Myotis ciliolabrum*
Long-eared myotis	*Myotis evotis*
Fringed myotis	*Myotis thysanodes*
Long-legged myotis	*Myotis volans*
Yuma myotis	*Myotis yumanensis*
Pale Townsend's big-eared bat	*Corynorhinus townsendii pallescens*
Pacific Townsend's big-eared bat	*Corynorhinus townsendii townsendii*
Birds	
Western burrowing owl	*Athene cunicularia hypugea*
Black tern	*Chlidonias niger*
Least bittern	*Ixobrychus exilis herperis*
White-faced ibis	*Plegadis chihi*
Plants	
Osgood Mountains milkvetch	*Astragalus yoder-williamsae*
Grimy ivesia	*Ivesia rhypara* var. *rhypara*
Packard's stickleaf	*Mentzelia packardiae*

ATTACHMENT B

Spotted Frog (*Rana luteiventris*, formerly *Rana pretiosa*)

Anderson, S. 1996. Spotted frog - (*Rana pretiosa*) Forest Service and Fish and Wildlife Service candidate. Unpublished report and data. 12 pp.

Green, D.M., T.F. Sharbel, J. Kearsley, and H. Kaiser. 1996. Postglacial range fluctuation, genetic subdivision and speciation in the western North American spotted frog complex, *Rana pretiosa*. Evolution 50:(1):374-390.

Green, D.M., H. Kaiser, T.F. Sharbel, J. Kearsley, and K.R. McAllister. 1997. Copeia 1997 (1): 1-8.

Hovingh, P. 1990. Investigations of aquatic resources in the Great Basin and adjacent regions with respect to amphibians, mollusks and leeches: a preliminary report for the tri-state region of Idaho, Nevada, and Utah. March 1990. 12 pp., plus appendices.

Idaho Department of Fish and Game, Idaho Department of Parks and Recreation, Bureau of Land Management, Regions 1 and 4 of US Forest Service, and US Fish and Wildlife Service. 1995. Draft Habitat Conservation Assessment and Conservation Strategy; Spotted Frog (*Rana pretiosa*). Idaho State Conservation Effort.

McDonald, M. 1996. Amphibian Inventory of the Jarbidge and Snake River Resource Areas. Idaho Bureau of Land Management Technical Bulletin No. 96-13.

Morris, R. L. and W. W. Tanner. 1969. The ecology of the western spotted frog, *Rana pretiosa pretiosa* Baird and Girard, a life history study. Great Basin Naturalist, 2:45-81.

Munger, J.C. 1994. A survey of the herpetofauna of Bruneau Resource Area, Boise District, with focus on the spotted frog, *Rana pretiosa*. Idaho Bureau of Land Management Technical Bulletin No. 94-7.

Munger, J.C., M. Gerber, M. Carroll, K. Madric, and C. Peterson. 1996. Status and habitat associations of the spotted frog (*Rana pretiosa*) in southwestern Idaho. Idaho Bureau of Land Management Technical Bulletin No. 96-1.

Patla, D.A. and C.R. Peterson. 1996. The effects of habitat modification on a spotted frog population in Yellowstone National Park. A Summary of the Conference on Declining and Sensitive Amphibians in the Rocky Mountains and Pacific Northwest (draft). Idaho Herpetological Society and US Fish and Wildife Service, Snake River Basin Office Report, Boise, Idaho.

Pilliod, D., C.R. Peterson, and P. Ritson. 1996. Impacts of introduced fish on spotted frog populations in high mountain lakes of central Idaho. A Summary of the Conference on Declining and Sensitive Amphibians in the Rocky Mountains and Pacific Northwest (draft). Idaho Herpetological Society and US Fish and Wildife Service, Snake River Basin Office Report, Boise, Idaho.

St. John, A.D. 1994. The spotted frog in the Lakeview District of Oregon. Report to the Bureau of Land Management Lakeview District Office.

Reaser, J.K. 1996a. Conservation status of spotted frogs in Nevada: 1996 state-wide surveys. Cooperative Agreement between the U.S. Fish and Wildlife Service and the Center for Conservation Biology, Stanford University. Attachment A. August 9, 1996. 15 pp.

Reaser, J.K. 1996b. Conservation of the spotted frog (*Rana pretiosa*) in Nevada: Multi-scale population status and trends assessment. A Summary of the Conference on Declining and Sensitive Amphibians in the Rocky Mountains and Pacific Northwest (draft). Idaho Herpetological Society and US Fish and Wildife Service, Snake River Basin Office Report, Boise, Idaho.

Turner, F.B. 1960. Population structure and dynamics of the western spotted frog. *Rana p. pretiosa* Baird & Girard, in Yellowstone National Park, Wyoming. Ecological Monographs 30: 251-278.

Turner, F.B. 1962. An analysis of geographic variation and distribution of *Rana pretiosa*. Am. Philosophical Society Yearbook 1962: 325-328.

U.S. Fish and Wildlife Service. 1993. Finding on petition to list the spotted frog. Federal Register 58(887):27260-27263.

U. S. Forest Service. 1994. Conservation assessment for the spotted frog (*Rana pretiosa*) in the Intermountain Region, USFS. U.S. Dept. of Agriculture. 30 pp.

ATTACHMENT C

FEDERAL AGENCIES' RESPONSIBILITIES UNDER SECTIONS 7 (a) and (c) OF THE ENDANGERED SPECIES ACT

SECTION 7 (a): Consultation/Conference

Requires:

1) Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;

2) Consultation with the Fish and Wildlife Service (Service) when a Federal action may affect a listed endangered or threatened species to insure that any action authorized, funded or carried out by a Federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The process is initiated by the Federal agency after determining the action may affect a listed species or critical habitat;

3) Conference with the Service when a Federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat.

SECTION 7 (c): Biological Assessment - Major Construction Activity 1/

Requires Federal agencies or their designees to prepare a Biological Assessment (BA) for major construction activities. The BA analyzes the effects of the action on listed and proposed species. The process begins with a Federal agency requesting from the Service a list of proposed and listed threatened and endangered species. The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the list, the accuracy of the species list should be informally verified with the Service. No irreversible commitment of resources is to be made during the BA process which would foreclose reasonable and prudent alternative to protect endangered species. Planning, design, and administrative actions may proceed; however, no construction may begin.

We recommend the following for inclusion in the BA:

1. An onsite inspection of the area affected by the proposal which may include a detailed survey of the area to determine if the species or suitable habitat are present.

2. A review of literature and scientific data to determine species distribution, habitat needs, and other biological requirements.

3. Interviews with experts, including those within the Service, State conservation departments, universities, and others who may have data not yet published in scientific literature.

4. An analysis of the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat.

5. An analysis of alternative actions considered.

6. Documentation of study results, including a discussion of study methods used, any problems encountered, and other relevant information.

7. Conclusion as to whether or not a listed or proposed species will be affected.

Upon completion, the BA should be forwarded to our office with a request for consultation, if required.

1/ A construction project (or other major undertaking having similar physical impacts) is a major Federal action significantly affecting the quality of the human environment as referred to in NEPA (42 U.S.C. 4332 (2) C).

APPENDIX F
NATIVE AMERICAN NOTIFICATION/ CONSULTATION CONTACTS

4-2-98 Certified letters to the following individuals are delivered: Marvin McDade (Chairperson Southfork Band), Gelford Jim (Chairperson Battle Mountain Band), and Nevada Penoli (Chairperson Wells Band).

4-3-98 Certified letters to the following individuals are delivered: Elwood Mose (Chairperson Te-Moak Tribe), Wilbur Woods (Chairperson Elko Band), Larry Kibby (Director of the Western Shoshone Historic Preservation Society).

4-6-98 Certified letters to the following individuals are delivered: James Paiva (Chairperson Shoshone-Paiute Tribe).

5-5-98 The project was presented and discussed at a meeting with members of the Te-Moak and Yomba tribes. Among those present were Elwood Mose (Chairperson Te-Moak Tribe), Clarence Andreozzi (Council member Wells Band), Kevin Brady (Chairperson Yomba Tribe), Maurice Frank (Vice-chairperson Yomba Tribe), Bernice Lalo (Battle Mtn. Band) and Donna Comacho (Band Coordinator, Battle Mtn. Band).

5-20-98 Telephone conversation with Winona Charles (Cultural Resource Section). They would provide a response in a couple of days.

5-20-98 Phone Call from Larry Kibby - Mr. Kibby said he would respond to the BLM letter regarding the project.

6-1-98 Telephone call to Wilbur Woods (Elko Band). Mr. Woods said he would provide a response.

6-1-98 Telephone call to Larry Kibby (Western Shoshone Historic Preservation Society). Mr. Kibby said he had been authorized to act on cultural resource matters for the Elko Band and would wait to respond until he has official notification.

6-1-98 Telephone call to Mavin McDade (South Fork Band). Mr. McDade said that the South Fork Band had no concerns with this project.

6-1-98 Messages were left asking Donna Comacho (Battle Mtn. Band), Ted Howard (Shoshone Paiute Tribe) and Nevada Penoli (Wells Band) to call BLM concerning the project.

6-2-98 Nevada Penoli (Wells Band) attempted to call Tim Murphy of BLM.

6-3-98 Message left for Elwood Mose to call BLM concerning the project.

6-3-98 Telephone call to Donna Comacho (Battle Mtn. Band). Ms. Comacho said she would get with Bernice Lalo who had the consultation letters from BLM. She

said they would decide whether to comment or request a field trip.

6-3-98 Conference call with Ted Howard and Winona Charles. Ms. Charles indicated she would prepare a letter and fax it to the BLM.

6-3-98 Message left for Nevada Penoli to call concerning the project.

6-5-98 Telephone call from Nevada Penoli (Wells Band). Ms. Penoli said that a traditional Shoshone travel route to Idaho was located in the vicinity of the proposed project. The Wells Band Council will discuss the matter.

6-11-98 Telephone call to Winona Charles (Shoshone-Paiute Tribe). Ms. Charles faxed a copy of the letter signed by the chairperson. The letter indicated that the tribe had a number of concerns including traditional cultural properties. A field trip to the project area was requested.

6-11-98 Phone call from Larry Kibby. Mr. Kibby is now authorized to represent the Elko Band and will be preparing his comments for the project today.

6-11-98 Faxed letter received from Larry Kibby (Western Shoshone Historic Preservation Society and Elko Band). The letter said that all archaeological sites of Native American origin are traditional properties of the Western Shoshone Indians and none are to be adversely affected in any manner.

6-11-98 Phone call to Bernice Lalo (Battle Mtn. Band). Ms. Lalo has not had time to review the letters, but will respond by June 25.

6-12-98 Message left for Elwood Mose to call the BLM in regard to the project.

6-15-98 The original of the letter from the Shoshone-Paiute Tribe is received by BLM.

6-16-98 Message left for Ted Howard to call regarding a date for field trip.

6-17-98 Phone call from Ted Howard. We agreed to have the MJV field trip on July 2.

6-17-98 Phone call to Bernice Lalo notifying her of the field trip to MJV on July 2. She and possibly others will go.

6-17-98 Phone call to Nevada Penoli and Charolette Healy regarding MJV field trip. Charolette and Harvey Healy will represent the Wells band.

6-17-98 Message left for Larry Kibby to call Tim Murphy about MJV.

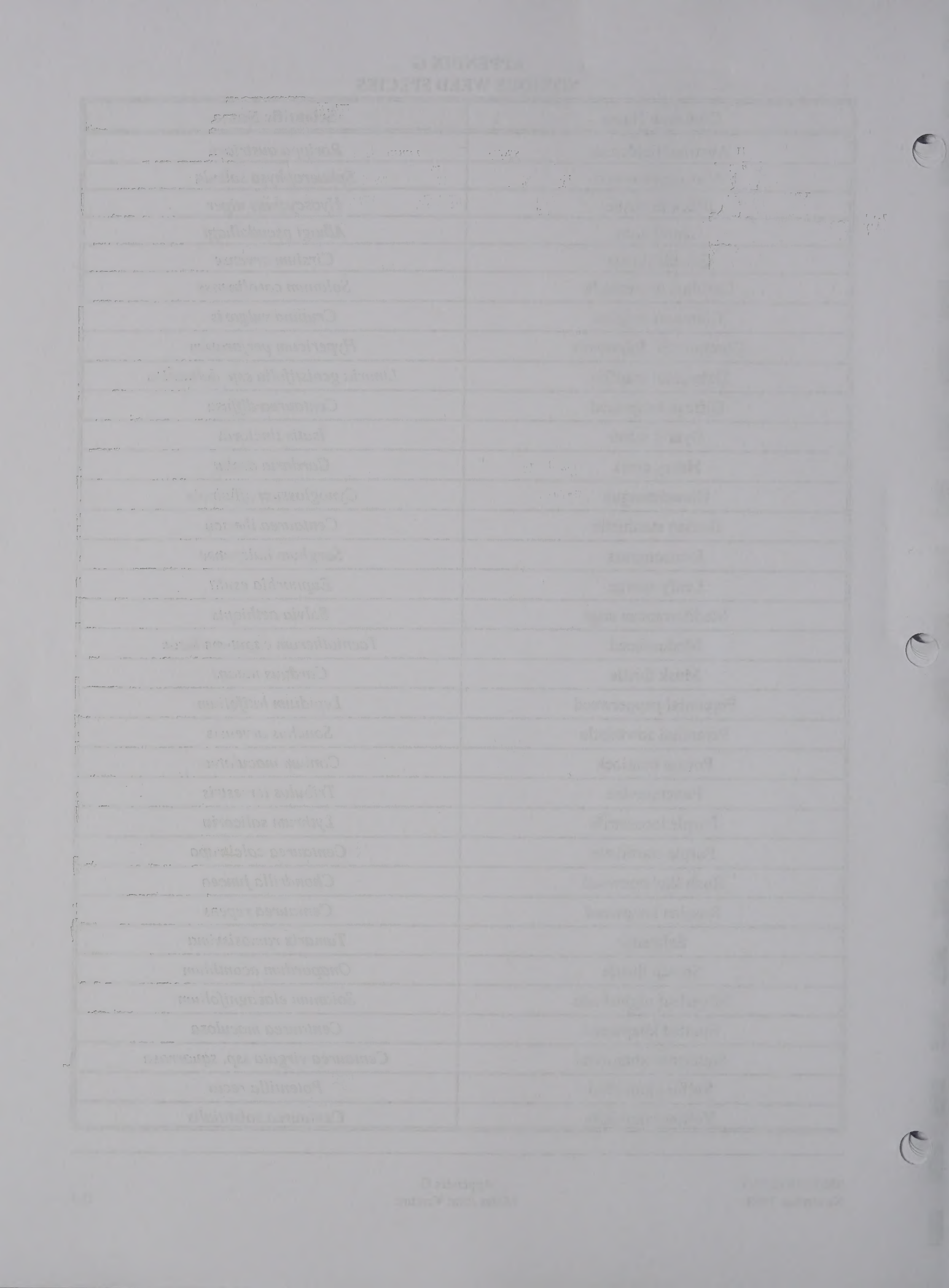
6-19-98 Phone call to Elwood Mose about Midas field trip. He tentatively plans to attend.

6-19-98	Phone Message left for Larry Kibby concerning Midas field trip.
6-29-98	Phone call to Ted Howard confirming field trip on July 2nd.
7-1-98	Phone call from Elwood Mose. Jody Abe will represent the Te-Moak Tribe at the Midas field trip.
7-1-98	Called Larry Kibby to notify him of Midas field trip. Since he just got back to town he may or may not make it.
7-1-98	Tried to call Wells Band to remind them of field trip. No answer and no answering machine.
7-2-98	Field Trip to Midas Project with representatives from Battle Mtn. Band and Shoshone-Paiute Tribe.
7-7-98	BLM monthly meeting with the Te-Moak Tribe. The BLM provided a brief status report for the Midas Joint Venture project and asked if anyone was prepared to provide comments. Nevada Penoli deferred to the Battle Mtn. Band. Bernice Lalo said there were people she needed to talk to.
7-16-98	Phone call to Ted Howard. Mr. Howard said he would talk to tribal council members about the project.
7-17-98	Phone Message left for Ted Howard to call BLM.
7-20-98	Phone call to Winnona Charles. Ms. Charles said she would check on the project and get back to the BLM since Ted Howard was gone.
7-21-98	Phone call to Bernice Lalo. Ms. Lalo said she would send a letter to us for the project. She said the concerns were similar to ones expressed for past projects.
7-23-98	Phone call from Winona Charles. Ms. Charles had talked to Ted Howard and would be preparing a letter for the project.
7-29-98	Phone call from Bernice Lalo. Ms. Lalo called on another matter but said she had not had time to send us a letter concerning the project. The earliest she can get to it is Monday, August 3.
7-30-98	Phone message left for Winona Charles to call Tim Murphy
8-3-98	Phone call to Ted Howard (Shoshone-Paiute Tribe). Mr. Howard said the Shoshone-Paiute had no concerns other than asking to be kept informed.

APPENDIX G
NOXIOUS WEED SPECIES

APPENDIX G
NOXIOUS WEED SPECIES

Common Name	Scientific Name
Austrian fieldcress	*Rorippa austriaca*
Austrian peaweed	*Sphaerophysa salsula*
Black henbane	*Hyoscyamus niger*
Camelthorn	*Alhagi pseudalhagi*
Canada thistle	*Cirsium arvense*
Carolina horsenettle	*Solanum carolinense*
Common crupina	*Crupina vulgaris*
Common St. Johnswort	*Hypericum perforatum*
Dalmatian toadflax	*Linaria genistifolia ssp. dalmatica*
Diffuse knapweed	*Centaurea diffusa*
Dyer's woad	*Isatis tinctoria*
Hoary cress	*Cardaria draba*
Houndstongue	*Cynoglossum officinale*
Iberian starthistle	*Centaurea iberica*
Johnsongrass	*Sorghum halepense*
Leafy spurge	*Euphorbia esula*
Mediterranean sage	*Salvia aethiopis*
Medusahead	*Taeniatherum caput-medusae*
Musk thistle	*Carduus nutans*
Perennial pepperweed	*Lepidium latifolium*
Perennial sowthistle	*Sonchus arvensis*
Poison hemlock	*Conium maculatum*
Puncturevine	*Tribulus terrestris*
Purple loosestrife	*Lythrum salicaria*
Purple starthistle	*Centaurea calcitrapa*
Rush skeletonweed	*Chondrilla juncea*
Russian knapweed	*Centaurea repens*
Saltcedar	*Tamarix ramosissima*
Scotch thistle	*Onapordum acanthium*
Silverleaf nightshade	*Solanum elaeagnifolium*
Spotted knapweed	*Centaurea maculosa*
Squarrose knapweed	*Centaurea virgata ssp. squarrosa*
Sulfur cinquefoil	*Potentilla recta*
Yellow starthistle	*Centaurea solstitialis*



APPENDIX G (continued)
NOXIOUS WEED SPECIES

Common Name	Scientific Name
Yellow toadflax	*Linaria vulgaris*
Waterhemlock	*Cicuta ssp.*
Western waterhemlock	*Cicuta douglasii*
Wild licorice	*Glycyrrhiza lepidota*

BLM Library
Denver Federal Center
Bldg. 50, OC-521
P.O. Box 25047
Denver, CO 80225